

AIR CONDITIONING & REFRIGERATION

of the Industry

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NEWS

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Learn to live and laugh —
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Stories of the Week
Gags of the Week
Revolution!
Women Drivers
Exonerated
TV Dialing Experts Switch
To Air Conditioning
Ideas from Norge's
Petterson
Sky Spirits In Japan
Convention Titters
Quotes of the Week

Stories of the Week

"I don't get it," a Junior High boy complained to his father as they both dressed for the wedding of the lad's older sister.

"Don't get what?" hastied his father, while hunting for cufflinks.

"Why you have to give her away? You ought to get a little something for her in return for your investment in this wedding."

Pianist Vladimir de Pachman refused to attend concerts by other keyboard artists.

"If they don't play well I'm annoyed," he elucidated. "If they play superbly I'm unhappy."

Gags of the Week

The reason Hollywood hasn't built a movie around the atom is that it hasn't been able to train an electron and neutron to put on a love scene.—*Grit*.

When divorces become so cheap poor people can afford them the last social distinction will be gone.—*Banking Magazine*.

You can't live on love nowadays without refinancing —*Cracklings*.

Revolution!

Ernest A. Jones, president of McManus, John and Adams advertising agency, has courage and realistic wisdom. "The public's honeymoon with television is over," he was brave enough to report to the American Association of Advertising Agencies.

"TV," he said, "is a good medium for selling shelf groceries and cosmetics, but is not effective in pushing durable goods, such as cars and home appliances."

"The top-rated shows simply aren't moving consumer's durables for their sponsors. And as for household equipment and industrial goods, I'm not so sure television is their cup of tea. The 60-second commercial is too fleeting to sell anything which costs \$300 to \$3,000."

(Concluded on Page 8, Col. 1)

A 'New Supermarket Trend' Seen In Ft. Wayne Emporium Type Store

FORT WAYNE, Ind. — Will the "supermarket of the future" be a smaller, "vending-machine type" of operation or will it be more like the huge, sprawling "emporium" opened here recently by Henry J. Eavey?

There's a trend these days to the former. But Eavey is striving to move in the opposite direction.

Referred to as the "world's largest supermarket," Eavey's new store at 5300 Decatur Rd. has a total area of 80,761 sq. ft., with 50,250 sq. ft. devoted to the selling area. It's actually a shopping center under one roof.

This fact will give you some idea of just how big the building is: The clear span area under the wooden trusses is approximately the size of a football field. In fact, Eavey last fall got

the local high school football team to scrimmage in the uncompleted store.

The estimated 45,000 persons who shopped the store on opening day saw many features seldom if ever seen in a supermarket. They watched an ice cream plant, a bakery, a three-story-high coffee roaster, and a peanut and cashew butter making machine in operation.

They saw a carillon which plays hourly time and weather signals; an "ask-it" system with six stations where customers can get item location or price information; and a mezzanine running the full length of the store.

They also saw, across the 267-ft. front of the building, a wide marquee under which is outdoor selling space for shrubbery, watermelons, bananas, Christmas trees, and other seasonal items.

And they saw a live-lobster tank, small greenhouse, public lounge, "Kiddies' Korral," pet department, pharmacy, candy shop, lunch counter, post office, liquor store, beauty-aid department, jewelry shop, and numerous other features. There was even a parrot at the door to greet them with a friendly "Hello, Pal."

Naturally, they also saw plenty of refrigeration equipment.

(Concluded on Page 10, Col. 1)

Distributor Prices Up 2 to 4% at Kelvinator

DETROIT — Kelvinator today announced distributor price increases from 2 to 4% on home freezers, refrigerators, wringer washers, and range models.

"These revised prices reflect increased freight rates and higher prices for component parts, which we have been absorbing for several months, as well as the increased price of steel," E. B. Barnes, Kelvinator general sales manager, said.

Prices for Kelvinator's 1957 automatic washers and dryers, introduced Aug. 1, remained the same.

Philco Appliance Prices Boosted 2-1/4 to 6-2/3%

PHILADELPHIA — Price boosts ranging from 2 1/4% to 6 2/3% on its refrigerators, freezers, and electric ranges have been put into effect by Philco Corp.

The company increased suggested retail prices of refrigerators an average of 4 1/3%, freezers 5 1/4%, and ranges 3 1/2%. The suggested retail

(Concluded on Page 4, Col. 5)

Vendo-Vendorlator Merger Needs Only Stockholder OK

KANSAS CITY, Mo. — The Vendo Co. here, will substantially expand its operation this month with the acquisition of the assets of the Vendorlator Mfg. Co. of Fresno, Calif.

Through the transaction, announced Aug. 20, by directors of both companies and subject to approval by shareholders, it is anticipated that sales will be increased to approximately \$40,000,000 for the affiliated companies.

Vendo manufactures vending equipment for the bottlers of Coca-Cola, automatic milk and ice cream machines for the dairy industry, a cookie machine, and

(Concluded on Page 21, Col. 1)

UA To Let Locals Form Divs. In Refrigeration Industry

Plan Will Allow for More Specialized Training

ASHAE Sets Plans For Meeting-Show Starting Feb. 25

NEW YORK CITY — Plans for its forthcoming meeting and heating and air conditioning show in Chicago the week of Feb. 25, 1957, have been announced by the American Society of Heating & Air-Conditioning Engineers.

The big show—the 13th International Heating and Air-Conditioning Exposition—will be held simultaneously with the 63rd annual meeting of the society.

Registration headquarters and the site of the technical sessions, according to society president John W. James of Chicago, will be The Conrad Hilton.

The exposition will be presented in the International Amphitheater from Feb. 25 to March 1 from noon to 10 p.m., except opening and closing day. Monday, Feb. 25, the hours are 2 p.m. to 10 p.m. and Friday, March 1, noon to 6 p.m.

The exposition is under the

(Concluded on Page 21, Col. 3)

KANSAS CITY, Mo. — A constitutional amendment empowering general officers to set up divisions in existing locals for organizing in the refrigeration industry was adopted by the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry at its annual convention here recently.

According to John J. McCartin, assistant general president of the United Association and chairman of its committee on laws, this will keep refrigeration and air conditioning mechanics within the framework of present locals, but will provide for more special training in their own type of work. He did not see this as any reversal of a trend in thinking of union members that locals should be general in character and not segmented into different trades.

This thinking was expressed further when the convention rejected a resolution offered by a Toronto local that would draw a line between the refrigeration and air conditioning workers and the plumbing and steam fitting trade.

Discussion on this resolution brought out fears of members

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Mueller Advances Nunlist, Mueller

MILWAUKEE — Frank J. Nunlist has been appointed to the newly created position of executive vice president of Mueller Climatrol, it was announced recently by H. P. Mueller, Sr., president.

H. P. Mueller, Jr., vice president, has been named to succeed Nunlist as vice president in charge of sales. Both appointments became effective immediately.

Nunlist joined the firm in 1941 as assistant chief engineer and became chief engineer in 1944.

(Concluded on Page 21, Col. 5)

Refrigeration Mechanics Pay Equalized In No. California

SAN FRANCISCO — Contract provisions for refrigeration mechanics here are now equalized as of July 1, 1956.

This agreement followed a series of meetings just concluded by the industry's Joint Conference Board, consisting of representatives of the Refrigeration Contractors' Association of Northern California and representatives of U. A. Local 38 of San Francisco.

The 1955 contract had provided equalization would become effective Jan. 1 of this year. The

(Concluded on Page 4, Col. 5)

115-Volt Portable 1-Hp. Room Unit In Emerson Radio Line

NEW YORK CITY — A 1-hp. room air conditioner that will operate on 115 volts highlights the 1957 room air conditioner line introduced to distributors here recently by the Emerson-Quiet Kool Corp., a subsidiary of Emerson Radio & Phonograph Corp.

The new unit was described by Stanley L. Abrams, president of Emerson-Quiet Kool, as "the answer for millions of people who need a 1-hp. unit but can't get 230 or 208-volt electricity."

This unit, Abrams said, will also be available as a portable. He claims it is the first porta-

(Concluded on Back Page, Col. 3)

Goodyear, Dayton Hike V-Belt Prices 5, 6%

AKRON, Ohio — Price hikes on their V-belts have been announced by Goodyear Tire & Rubber Co. here and Dayton Rubber Co.

Reporting that it has raised prices on its industrial rubber goods line, Goodyear said those of V-belts, with the exception of steel cable V-belts, have been boosted from 4% to 5%. Dayton Rubber disclosed that effective Aug. 27, prices of all lines of power transmission V-belts and radiator hose will be advanced from 3% to 6%.

Industrial Boom Makes Houston Seek New Water To Bar Shortage by '60

HOUSTON, Texas — Spurred by an industrial boom since World War II this city of more than 1,000,000 population is looking to three rivers for a solution to its water problems.

One, the San Jacinto, already has been harnessed and supplies thirsty industries and homes with 150,000,000 gals. of water daily.

Also being considered are two projects on the Trinity river and one on the Neches. At present the city gets about 130,000,000 gals. daily from wells in seven water fields in the area. This is augmented by the 150,000,000 daily from the city's Lake Houston.

By 1960 it is expected that the Houston area will need 461,000,000 of water daily. In De-

cember, 1954, the Houston Chamber of Commerce warned that the city must plan immediately to increase its water supply or face a shortage by 1960. Besides the three projects considered, Texas cities threatened by shortage have even talked of tapping the Mississippi.

A.R.A. Custom Cools Thunderbird

HOUSTON, Texas — A Ford "Thunderbird" was recently air conditioned by A.R.A. here, according to Manager John R. Cook.

The custom installation was made for Charles Wickersham, manager of Paul Gasow Motors in Orange, Texas.

Carrier Div. Appoints Droege

DALLAS — J. Gary Droege has been appointed business manager of Carrier Corp.'s Machinery and Systems Div.'s Southwest district sales office.

Offers 11-Point Program To Markets For Improved Holding of Frozen Foods

CAMBRIDGE, Mass. — An 11-point program which he suggested supermarkets adopt to improve the merchandising of frozen foods was outlined recently by Dr. Bernard Proctor, chairman of the Food Technology Dept. of Massachusetts Institute of Technology.

He offered the suggestions in stressing at a frozen foods seminar here that constant vigilance is required to control the "arch enemies" of frozen foods — time and temperature. He said supermarket operators have a key responsibility in maintenance of quality of frozen foods handled.

Dr. Proctor recommended that supermarket operators:

1. Make one person responsible.

2. Have a laboratory check on products.

3. Check storage temperatures and keep records.

4. See that proper dunnage is used to insure air circulation.

5. Keep a temperature record of each large shipment.

6. Keep back room temperature below 20° F. or less if frozen foods are there for more than an hour.

7. Pre-cool trucks and keep them refrigerated.

8. Put old stock at the top of cabinets.

9. Keep merchandise below the load level indicated.

10. Have thermometers in all cabinets, with alarm signals to warn if they get too warm.

11. Have defrosting indicators in the packages.

Examiner Upholds Ideal Cooler Corp.'s Right to Trademark

ST. LOUIS — The Examiner of Interferences in the U. S. Patent Office has sustained the action brought by Ideal Cooler Corp. of St. Louis against Ideal Dispenser Co. of Bloomington, Ill., holding that the Illinois manufacturer of dispensers was not entitled to a trademark registration of the name "Ideal."

Ideal Cooler Corp. claimed a superior right in "Ideal" as a trademark for refrigerated cabinets on the grounds of prior usage, making the point that it alone was entitled to the presumption of ownership which a U. S. trademark registration affords.

The Examiner of Interferences held the facts established that Ideal Cooler Corp.'s use began in 1936, at least four years before use by the Ideal Dispenser Co.

The Examiner of Interferences did not agree with the contention of Ideal Dispenser Co. that there were marked differences in the products involved, in particular the fact that Ideal Dispenser Co. produces coin-operated beverage dispenser. The Examiner ruled against this contention primarily on the basis that bottlers of soft drinks use both types of products involved in "the dispensing of their goods," the report further continued.

Thos. Deering Heads New Tom Deering Co.; To Make Conditioners

CINCINNATI — Thomas Deering, who recently resigned as president of Deering Air Conditioning Co., has re-entered the air conditioning and heating field.

A new corporation, Tom Deering Co., has been organized to design, develop, and sell air conditioners, heaters, and other allied products, according to Attorney Frank Richter, who filed the incorporation papers.

The new firm, with Deering as president, has offices at 2215 Victory Pky. Richter said the company, currently in heating equipment sales, plans to develop new heating and air conditioning products, the announcement indicated.

Deering Air Conditioning Co. was organized by Deering in 1952.

The new concern was incorporated with 1,500 shares of no par value common stock, Melvin Fisher, vice president, and Edna Deering, treasurer, are two other principals of the new business.

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LOWEST in operating costs, too! Kramer's new "L" THERMOBANK saves important dollars every day it works for you. It's the only LOW temperature automatic hot gas defrost system that works trouble-free at any temperature level, from plus 32° to minus 75°. Let us prove that it costs less to own the best!

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'Following Path of Auto Industry'

Fewer Appliance Mfrs., Dealers Seen by Witting of Westinghouse as Costs Rise

SAN FRANCISCO — Fewer and larger manufacturers, and a smaller number of dealers serving those manufacturers, was the prediction for the future of the major appliance industry made in a recent interview here by Chris J. Witting, vice president of Westinghouse Electric Corp. and general manager of the firm's consumer products division.

"The industry can be expected to follow the path of the automobile industry, with half-a-dozen large companies covering the field," Witting stated.

Smaller manufacturers can't stand the costs of retooling and restyling for new models, and the increasing costs of maintain-

ing sufficient distribution, Witting indicated.

On the matter of the number of dealers, Witting said that "we have found that it costs virtually as much to service a small dealer as a large one, and we anticipate there will be fewer in the future."

Westinghouse once had 18,000 appliance dealers, and it was indicated that this has dropped to around 13,000, of which "20 to 30% give us 80% of our sales volume."

Witting said that second quarter sales of appliances were up 36% from the like quarter last year, and July and August sales are running even ahead of these figures.

First RCA Whirlpool Refrigerator To Provide Complete Line for 1957

ST. JOSEPH, Mich.—"Assuming that field tests substantiate laboratory tests, the first full line of RCA Whirlpool major appliances will be introduced early in 1957," Elisha Gray, president of Whirlpool-Seeger Corp., told stockholders last week.

Reviewing the position of the company's products, Gray said the initial line of RCA Whirlpool refrigerators is scheduled for production in about 60 days for marketing early in 1957. He stated that the line "has been completely field tested and reports are extremely gratifying."

Gray reported that the company's first line of RCA Whirlpool air conditioners "met with immediate consumer acceptance. We are practically sold out at both the factory and distributor

levels, and dealer stocks are nearly depleted."

"Six months ago our sales forecast for air conditioners appeared daring. We attribute our present clean inventory position to an aggressive distributor sales organization and rapid consumer acceptance of the RCA Whirlpool brand name."

The report said that RCA Whirlpool freezer sales, "which started slowly at the beginning of the year," have shown "substantial and satisfactory increases during the second quarter. 'Coldspot' refrigerator and freezer sales to Sears, Roebuck & Co. have been steady."

Gray also pointed out among other things, that the company's St. Paul division is producing a bulk milk cooler "for which

there is a growing demand in the dairy farm market. This division also has a backlog of defense contracts of \$4,761,000."

Declaring that considerable progress has been made in expanding and altering existing facilities at the various division plants preparatory to making more new products, Gray said:

"The largest single aspect of make-ready was undertaken this spring at the two plants that comprise our Evansville refrigeration division. A 90,000-sq. ft. addition for a press room, storage of raw materials, and for use as a tool-and-die department, is nearing completion. Extensive changeover between the two plants and installation of new equipment is proceeding according to schedule."

"This division manufactures refrigerators, freezers, and certain air conditioning units. It also has a defense backlog of \$8,348,000."

BOHN offers the only COMPLETE LINE of ALUMINUM "LOW-SIDE" PRODUCTS

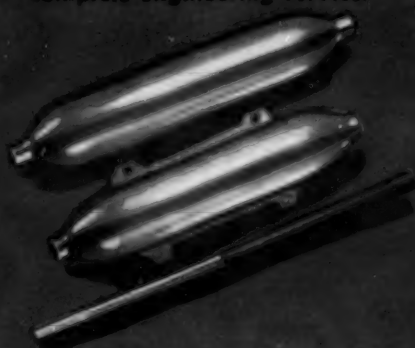


BONDED-SHEET EVAPORATORS

Production quantities of both types are being produced by Bohn for the country's leading refrigerator manufacturers. Whatever your evaporator problems, it will pay you to take advantage of Bohn's experience and complete engineering service.



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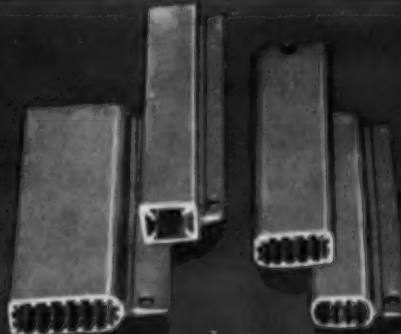
MISCELLANEOUS PARTS

Simple or complex Bohn high quality aluminum accumulators are uniformly produced at lowest possible cost. Every Bohn connector double-checked for perfection.



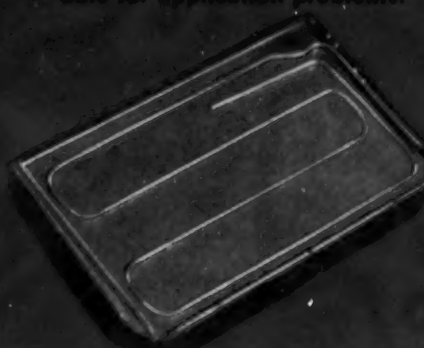
MULTIPLE FREEZER SHELVES*

Shipped as shown. No joining or further processing required. Simply open out and install. Bohn triangular aluminum tubing gives shelves greater rigidity and primary freezing surface.



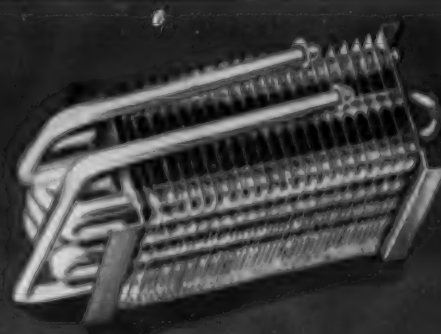
SPECIAL TUBULAR HEAT TRANSFER PRODUCTS

Bohn engineering assistance and wide experience are available for application problems.



TUBE-ON-SHEET FREEZER SHELVES

Bohn freezer plates made with seamless aluminum tubing freeze food faster at less cost; provide uniformly low temperature throughout freezer.



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Presently being supplied to the industry, combine high efficiency with lower cost.



COILED TUBING

Bohn aluminum tubing is available complete with copper brazing spuds. You can save as much as 5¢ to 29¢ per foot by switching from copper to aluminum.

*Patent Applied For

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EVAPORATORS
CONNECTORS
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For more information about products advertised on this page use Information Center, page 14.

GENERAL SUPERINTENDENT FOR NON-FERROUS TUBE BENDING PLANT

We have an opening for a fabrication superintendent with considerable technical and supervisory experience in all phases of non-ferrous tube bending and fabrication. The salary is open, but a statement of basic requirements is necessary. Write fully in detail, giving age, experience and education. All replies will be handled in strict confidence. Our employees have been informed of this advertisement.

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**OIL SEPARATION AND
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ENGINEERED INTO
A SINGLE UNIT**



the HEAT-X 'OSM' OIL SEPARATOR-MUFFLER

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Silencing is more than just incidental and partial with Heat-X 'OSM' Oil Separator-Mufflers. These units were specifically engineered to completely silence all system noises and absorb all pulsations from the compressor . . . in addition to separating entrained oil.

And these "all-in-one" units make float troubles a thing of the past. 'OSM' Oil Separator-Mufflers have no floats to hang open or stick closed. Instead, units incorporate a positive action Velocity Pressure Mechanism, exclusive with Heat-X, which opens only when compressor is running . . . closes of its own weight when compressor stops.

Ratings based on tonnage, not horsepower, permit close matching of unit to requirements . . . eliminate need to buy more than required capacity.

Ruggedly constructed to A.S.M.E. specifications. Available in capacities from 1 to 75 Tons F-12 and 1 to 100 Tons F-22.



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BREWSTER • NEW YORK

Banks Jump Rates On Loans; Tighter Credit Is Likely

DETROIT, Aug. 23—Banks this week took the lead in increasing the cost of borrowing money, and thus putting further brakes on any credit expansion.

Action by the Federal Reserve Board in raising the discount rate was expected at any moment. The FRB is usually ahead of the banks in making a move to make borrowing more expensive when inflationary tendencies run high and money gets tight.

New York and Boston banks were the first to make the move, raising the prime interest rate (that granted to biggest borrowers) to 4% highest since the early Thirties. Other banks around the country followed.

The increased mark-up in interest rates was said by bankers to be due to one main thing—tight money. One New York banker was quoted as saying "we have little money to lend, and we don't know where any more is coming from."

However, while banks across the country generally followed the action of the Eastern banks, not all of them shared the opinion that there is any terrific shortage of money for borrowing. Some bankers in the Midwest, Southwest, and Pacific Coast indicated that there was money around to lend, and that the new interest rates wouldn't affect borrowing much.

Securities Dealers Take Copeland Stock Issue To Finance Expansion

SIDNEY, Ohio—The recent sale to the public of 125,000 shares of common stock by Copeland Refrigeration Corp. was substantially over-subscribed, Copeland reported.

The offering was underwritten by a nationwide syndicate of securities dealers headed by Baker, Simonds & Co. of Detroit.

The new issue of 125,000 shares bring the total of common stock issued to 800,000 shares. An additional 50,000 shares is held by the company.

Frank J. Gleason, executive vice president and general manager, also disclosed that Copeland recently negotiated a two-million dollar long-term loan with John Hancock Mutual Life Insurance Co. of Boston.

Both stock issue and loan are financing Copeland's expansion program. The company now is constructing a 270,000-sq. ft. plant in Sidney. Production of compressors and condensing units and commercial refrigerators will be expanded and consolidated in the new plant early in 1957.

Sales have increased from six and a quarter million in 1946 to more than \$25,000,000 in 1955. Gleason also indicated that a new sales record of approximately \$30,000,000 is in sight for the 1956 fiscal year ending Sept. 30, 1956.

To Air Condition Bldg.

WOODRUFF, S. C.—A 14-room Medical building with air conditioned offices and examining rooms will be erected on East Georgia St.



WINNER of "Miss Chrysler Airtemp" title with 98.2° F. skin temperature was Lois Conway in a Chrysler distributor's "Cool Gal" contest during a summer-long air conditioning sales promotion. She received an all-expense paid Hollywood vacation.

100 Dealers Attend Amana Plans To Open Airtemp 'Cool Gal' Factory Branch Study

CHICAGO—Miss Lois Conway, who displays other attractions than the 98.2° F. skin temperature that made her the coolest gal in the contest, has won the title of "Miss Chrysler Airtemp" and an all-expense paid vacation in Hollywood, Calif.

Her selection climaxed a summer-long sales promotion sponsored by the Electric Supply Co., Airtemp distributor here.

Miss Conway will retain the title for a year with pay. Four other finalists in the "Cool Gal" contest received prizes of \$150 in electrical merchandise of their choice.

Ten Airtemp air conditioners were also awarded to Chicago area voters in the contest, who helped select the finalists.

More than 100 Airtemp dealers attended the three-hour show during which the final judging occurred. They were given a "behind the scenes" look at how a television show and a beauty contest are staged.

The "Cool Gal" promotion was produced by Geren Advertising for Electric Supply Co.

Cory To Merge Divs., Room Unit Production

CHICAGO—Production facilities of Cory Corp.'s Mitchell Mfg. Div. and Fresh'nd-Aire Co. are being consolidated under one roof at the Mitchell plant site, with \$750,000 to \$1,000,000 being spent to improve the Mitchell facilities, it was reported.

An advertisement in a local newspaper disclosed that the company's plant in Grayslake, Ill. is up for sale or lease.

"We are going to manufacture all of our room air conditioners and dehumidifiers in one plant," said J. W. Alsdorf, president of Cory. Each division will continue to operate autonomously, and there has been no change in the executive and sales personnel of either.

CHICAGO—To determine at first hand the problems of an Amana distributor, Amana Refrigeration, Inc. plans to open a factory branch here, George C. Foerstner, executive vice president, announced recently.

Termed an experiment, the Chicago branch will be opened at the earliest possible date, he said.

No other branches are planned, he added.

Tom Fitzgerald, previously regional manager in St. Louis, will manage the new factory branch.

Perry Winokur, executive vice president of Mainline Distributors, Inc., present Chicago distributor for Amana, is expected to join the branch.

Philco Price Boost --

(Concluded from Page 1, Col. 2) price of Philco's custom sectional freezer and refrigerator was advanced 5 3/4 %.

According to Philco, the refrigerator increases will range from \$5 to \$30, the price hikes on freezers will be from \$10 to \$30, and ranges will move up from \$5 to \$25 a unit.

Refrigeration Mechanics --

(Concluded from Page 1, Col. 4) equalization negotiations have finally removed a wage differential, which was 25 cents an hour less for refrigeration mechanics employed by companies not in the trade, such as dairy and ice cream companies, it was reported.

MARSH Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.

PRESSURE GAUGES and Dial Thermometers for all services.

MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.

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Distributor Sales of Cooling, Commercial Equipment Rise 8%

WASHINGTON, D. C.—Sales of air conditioning and commercial refrigeration equipment distributors in the first half of 1956 were 8% higher than in the like year-ago period, according to the U. S. Bureau of the Census.

June sales of the distributors rose 17% compared with the same month of 1955 and were up 7% from May. Their end-of-June inventories increased 4% compared with a year earlier but were down 1% from May 31.

Sales of distributors of electrical appliances, TV and radio sets and parts, and electronic equipment and parts in the first six months of this year climbed 7% above the corresponding period of 1955.

Their sales in June topped the year-ago level by 8% and gained 4% compared with May. Their inventories on June 30 were 6% bigger than at the end of June, 1955, and 1% smaller than on May 31.

Sales of all types of merchant wholesalers as a group during the first six months of 1956 were 10% higher than in the first half of 1955. June sales, contrary to their usual seasonal pattern, declined 3% from May but were 6% higher than sales in June, 1955.

Inventories of wholesalers at the end of June were down 1% from the May 31 level but were 10% above stocks on hand a year ago.

Air Filter Group Has Washington Office

WASHINGTON, D. C.—The recent summer meeting of the Air Filter Institute authorized the group to establish a permanent office here at 300 Independence Ave. S.E. to carry on general business of the organization and aid in clarification of government specifications on air filtration.

The Institute authorized underwriting a joint research project on air filtration with the University of Minnesota and American Society of Heating & Air-Conditioning Engineers for 1957, it was reported.

Membership of the AFI at this meeting represented 90% of the dollar volume sales of the air filter industry, it was further noted.

AFI officers include Lewis S. Dollinger, Jr., Dollinger Corp. president; Albert W. Brown, Research Products Corp., first vice president; William K. Gregory, Continental Air Filter, Inc., second vice president; and Arthur Nutting, American Air Filter Co., Inc., secretary-treasurer of the group.

Commerce Chamber Lists Houston Cooling Projects

HOUSTON, Texas—Fifteen of the 34 remodeling and alteration projects listed for the metropolitan area by the Houston Chamber of Commerce recently are for air conditioning of buildings, it was reported here.

In addition, five of the 14 church construction projects listed by the Chamber were air conditioning projects. Two public projects also were air con-

ditioning, at Ellington Air Force Base—one of them for air conditioning the weather station.

The air conditioning projects were part of the monthly construction contract awards summary made by the Houston Chamber of Commerce for May, the most recent month on which information was available.

Total amount for the 34 alteration, addition, and air conditioning projects was \$1,235,472. There was no separate breakdown for air conditioning.

Grand Rapids Studies 2 Moves as Water-Cooled Conditioning Gulps 15 Million Gals. Per Day

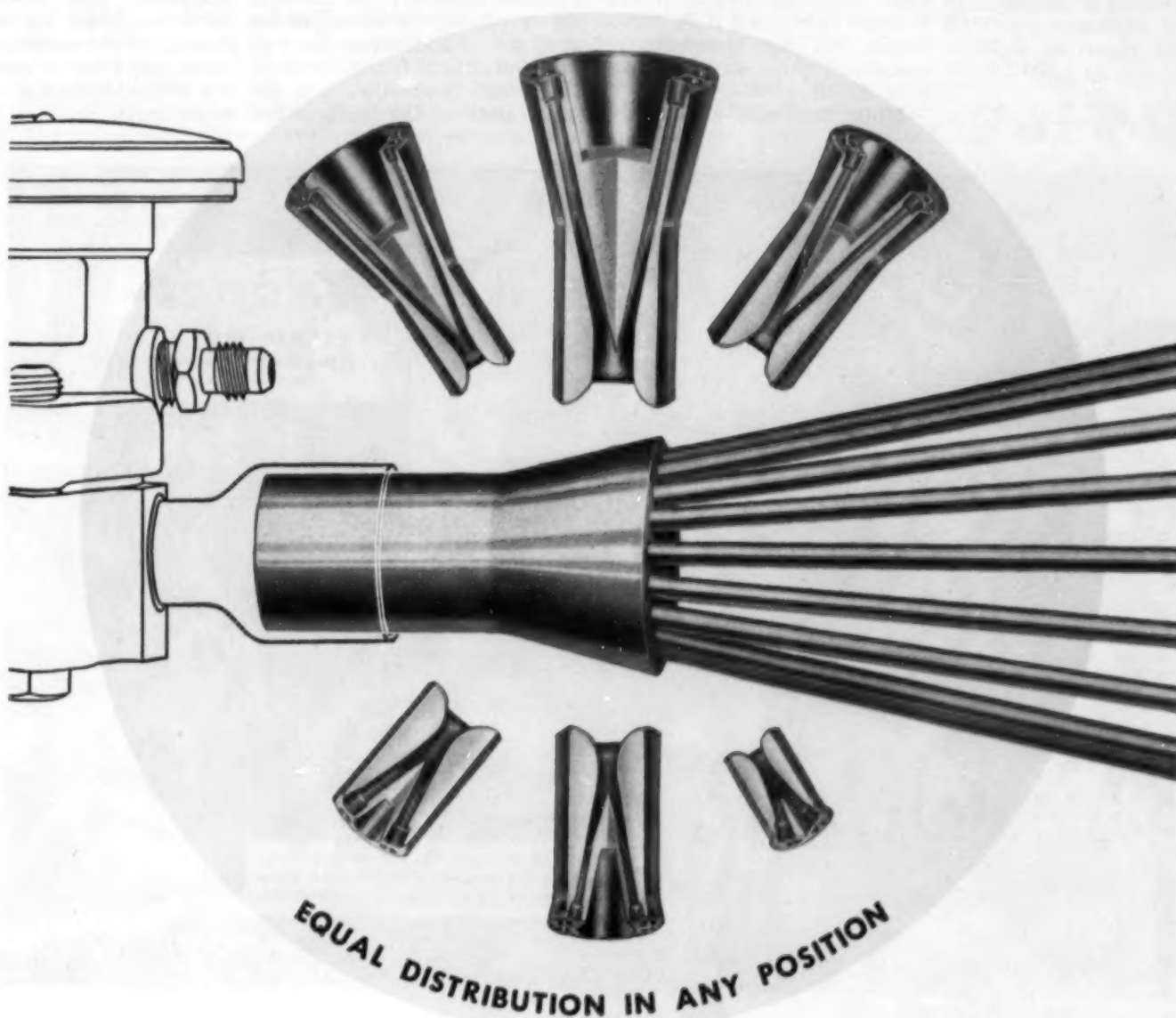
GRAND RAPIDS, Mich.—With water-cooled air conditioners gulping 15 million gals. of water on hot days, the Grand Rapids city commission is considering two moves to correct the situation.

One is to institute heavy water surcharges against non-recirculating air conditioners, it was reported.

The other is to join the Kent-

Ottawa Metropolitan Water Authority in building a new \$22 million pipeline to bring additional water from Lake Michigan, 30 miles to the west.

Robert Daverman, consulting engineer, told the commission that, if not curbed, non-recirculating air conditioners would take half the city's water supply during hot weather within the next 25 years.



one-piece ALCO venturi-flo distributor

Low pressure drop—Permits closer, more economical thermo valve sizing.

Wide application range—from 25% of capacity to 150% of rated capacity.

One-piece—No nozzles or orifice plates to stock and install.

One Venturi-Flo replaces distributors requiring as many as 6 or 7 nozzles!

Easy to select—No nozzles to size.

BUY QUALITY—BUY ALCO

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ALCO VALVE CO.

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Many Home Buyers Unaware of Air Conditioning Advantages

Builders Say Problems of Selling Central Systems Include Price, Getting Adequate VA-FHA Valuation, Qualifying Buyers for Loans

WASHINGTON, D. C.—Nearly half of the home builders responding to a questionnaire on residential air conditioning sent them by the National Housing Center said that prospective home buyers are unwilling to pay the extra cost of air conditioning even though they can afford to buy it.

More than half of the responding builders agreed that prospective buyers are often unaware of the advantages of air conditioning.

The questionnaire was sent to a selected list of builders. It brought 24 responses from 19 states. The reporting builders expected to put up 4,400 houses this year.

Here is a summary of the

results of the survey as reported by the National Housing Center:

It is apparent from the survey that few builders have much experience with central air conditioning.

Almost 10% of the homes erected in 1956 by reporting builders will have central air conditioning as compared to about 2% in each of the two preceding years.

However, only two builders have put up as many as 100 units with air conditioning since 1954, while an additional nine builders have used it in 10-100 homes. Of the remaining respondents, three have not used it at all since 1954.

While few new homes have

been sold with central air conditioning installed, many are reported to be specially designed so that it can be added easily and efficiently later.

It appears that about half of the 1956 homes are being specially designed for later installation of air conditioning against 40% last year and 20% the year before. Eleven of the builders made such provision in 100 or more homes since 1954, and another five had built 10-100 such homes, it was pointed out.

Taken together, one third of the reporting builders either had air conditioning or had made provision for it in all of their 1955 production, and another sixth of the builders had

in half or more of their 1955 homes.

It appears that doing business with local air conditioning dealers and distributors is no more of a problem than doing business with anyone else.

In the 18 responses to this question, three said they were having "much" difficulty, five said "little," and 12 said "none." This would not seem to be bad for a relatively new, complex, and expensive item.

'Lower Cost Would Result From Proper Sizing'

On the other hand, one builder who is also a distributor for air conditioning equipment commented: "If merchant builders would honestly size heating equipment, fan capacity, and ducts sufficient for air conditioning when representing house to be piped for air conditioning the difference in cost would not be so great."

The principal problem in increasing sales of air conditioned homes is price.

One third of the respondents mentioned the problem of price and one sixth mentioned service. Also noted were inadequate knowledge on the part of the builder and installation difficulties. In connection with price, responses from arid Arizona, New Mexico, and Utah pointed to the competition of evaporative units.

Getting an adequate FHA or VA valuation for air conditioning is often a problem.

Half of the replies said they were having difficulty getting adequate valuation. One builder reported, "In talking with officials of VA and FHA, I find that they have not had enough cases to quote experience."

As with any "extra" of significant cost, air conditioning creates, or rather, adds to the difficulty in qualifying buyers for mortgage loans.

Ten of the 16 replies to this question reported difficulty in qualifying prospective purchasers traceable directly to the air conditioning extra.

Tight Mortgage Market Hinders Qualifying Prospects

This is compounded by the current tightness in the mortgage market. In addition to the original cost, several builders point out that the year-round operating cost raises the income requirements.

Prospective buyers are often unaware of the advantages of air conditioning.

Over half of the builders said that buyers were not aware of the advantages. However, a couple of builders reported that customers were easily sold if they could afford it.

Often, buyers are unwilling to pay the extra cost even though they were able to.

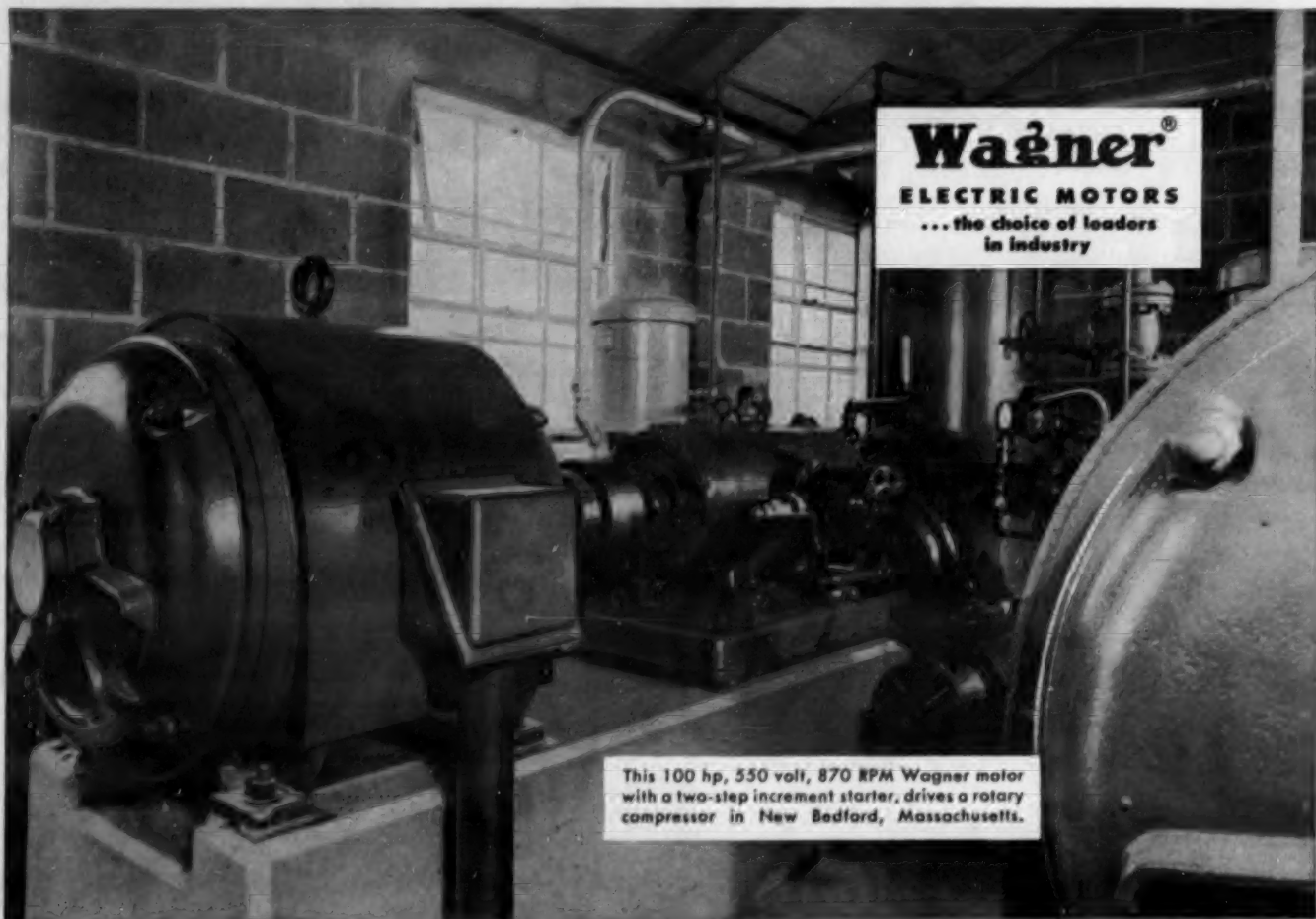
Nearly half of the replies to this question said that buyers were able but unwilling to pay the extra cost. This, of course, reflects many things—the need for air conditioning is less in some areas than in others, competition of lower cost units (window and evaporative), and lack of buyer awareness of the advantages of air conditioning.

Here are some other comments on consumer acceptance:

"Still considered as a luxury."
"The attitude seems to be, 'we'll add it later.' What they add later is usually a room air conditioner."

"Buyers... want other extras first. Most are satisfied with just one room cooled with window unit."

(Concluded on next page)



This 100 hp, 550 volt, 870 RPM Wagner motor with a two-step increment starter, drives a rotary compressor in New Bedford, Massachusetts.

Start large polyphase motors with minimum line voltage disturbance

USE THE Wagner INCREMENT MOTOR AND STARTER COMBINATION

Here's a modern, economical, highly efficient way to start large polyphase motors—the Wagner Increment Motor and Starter "Package."

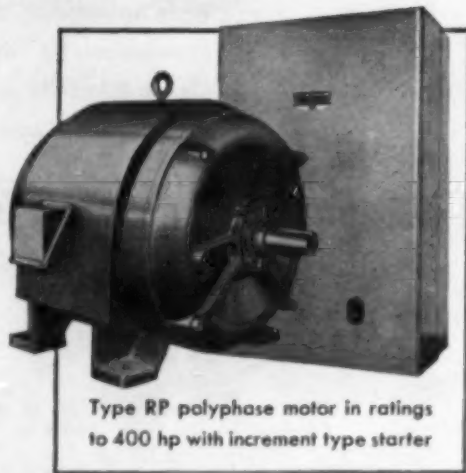
By reducing current drawn from the line on each point of the starter, the combination limits the inrush of motor current to values that are acceptable for the distribution systems of most power companies.

Voltage disturbances on the line are reduced because current taken from the line is not broken during the starting period—as it is when auto-

transformers or compensator type starters are used.

Wagner two-step increment motor and starter combinations are suitable for most applications. For installations where unusually low inrush of starting current is desired, Wagner can furnish three-step and four-step increment starters.

Your nearby Wagner engineer will help you select the increment motor and starter combination that meets your requirement. Call the nearest of our 32 branch offices, or write us.



Type RP polyphase motor in ratings to 400 hp with increment type starter



Wagner Electric Corporation
6441 Plymouth Ave., St. Louis 14, Mo., U.S.A.

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES • AUTOMOTIVE BRAKE SYSTEMS—AIR AND HYDRAULIC

For more information about products advertised on this page use Information Center, page 14.

ASPIR-JET SPRAY NOZZLES RAISE TOWER EFFICIENCY

The swirling, atomizing action of the water as it goes through the Aspir-Jet means more effective heat transfer and higher efficiency from any spray-filled cooling tower. Pressure as low as 1/2 pound gives effective water break-up and distribution. Formed of butyrate plastic, Aspir-Jets will not corrode.



• Available through Refrigeration and Air Conditioning Wholesalers.

Manufacturers & Refrigeration Wholesalers: if you are not now using or stocking this outstanding new product, wire or write

THERMAL AGENCY

National Sales Agents
1515 DALLAS • HOUSTON, TEXAS

Many Home Buyers Unaware--

(Concluded from preceding page)

On Costs:

"Many people planning a new home with central air conditioning change their minds when they are advised the cost of the system. It is true, however, that we are designing our hot air systems so that central air conditioning can be efficiently installed later and we have found this is a good selling point."

Some Prospects Don't Qualify For Increased Home Loan

"The buying public in this area all want air conditioning (but) a large number of prospective buyers' incomes do not qualify for additional cost."

"We have little trouble selling if the customer can make the payments."

Other builder comments:

"I strongly believe that houses should not be sold on the basis that air conditioning can be added later. Our houses are designed for air conditioning only and we will not attempt to design one for adding later. It affects operating efficiency and cost."

Lack Understanding of Central Unit Operation

"Most customers of central air conditioning expect it to cool a house in 15 minutes or on partial operation whereas most systems are designed for continuous operation. Double capacity if equipment is required to give spot operation satisfactorily."

From Nashville, "There are about 5% of housing \$10,000 to \$11,500 using 1-ton G-E wall units at a cost of approximately \$300 per unit."

"About 10% of new housing \$11,500 to \$15,000 using 1½ to 2-ton attic units (Chrysler Airtemp and Vornado)."

"About 25% of all new housing \$15,000 to \$45,000 using year-round air conditioning and heating, gas fired which are (mostly Chrysler, Carrier, and York). Five per cent air conditioned only."

"In my opinion the biggest detriment to central air conditioning at this time, is the extremely tight mortgage market. . . . The tendency . . . is to hold costs down as far as possible because the addition of an air

conditioning system may disqualify the very buyer who would otherwise buy."

'Public Knows Very Little About Air Conditioning'

"The public, as a whole, knows very little about air conditioning. Manufacturers could obtain better public acceptance and customer satisfaction if they would furnish published data to purchasers of air conditioning installations, with information on the following points:

"(a) What users can and cannot expect from air conditioning."

"(b) Proper and efficient operation of the equipment."

"(c) List of 'Do's' and 'Don'ts' which affect the efficiency, cost of operation, and satisfactory operation of the equipment."

"(d) Suggestions on 'How To Live In an Air Conditioned House.'"

Wis. Utility Offers Home, Farm Rewiring Financing

MADISON, Wis.—A rewiring finance plan tested by Wisconsin Power & Light Co. in the Sheboygan and Portage districts proved successful and has now been expanded to include all of the company's area, the utility announced recently.

The plan is intended to cover improvements or extension of existing residential and farmstead wiring systems. Typical examples are new service entrance, new appliance circuits, and additional outlets.

Under the plan, the customer makes arrangements with the electrical contractor of his choice for the work to be done (limit of \$360). The contractor makes arrangements with Wisconsin Power & Light for the financing. W. P. & L. pays the contractor after the work is completed.

The customer pays a small

amount each month (\$5 minimum) on his electric service bill until the specified amount is paid. A carrying charge of ½ of 1% per month on the cash amount of the contract is figured as the finance charge, it was explained.

Contract forms, details of the plan, and promotional material to be used with the plan can be secured from Wisconsin Power & Light.

O'Shaughnessy Named

TORRINGTON, Conn.—Kenneth E. O'Shaughnessy has just been appointed factory sales representative in the New England and central New York states sales territories of The Torrington Mfg. Co. here, it was announced.

He will represent the company's Air Impeller Div., it was noted.

O'Shaughnessy joined Torrington in 1953 as sales supervisor.

ARI Names Kellogg In Public Relations

WASHINGTON, D. C.—Appointment of G. T. (Ted) Kellogg to the position of assistant to the director of public relations of the Air-Conditioning and Refrigeration Institute was announced recently by Geo. S. Jones, Jr., managing director of ARI.

Kellogg, who has been identified with the publication and public relations fields in the Washington area for the past 25 years, will report directly to George E. Mills, ARI director of public relations. Among his responsibilities will be the editorship of the institute's monthly publication, *Koldfax*.

Immediately prior to joining ARI's public relations department, Kellogg was editor of a group of weekly newspapers in northern Virginia.



why be

short-changed

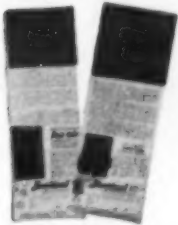
by 'under-par' air-conditioning?

...make your business and profits grow with quality **JANITROL** cooling!

Only Janitrol gives you both 'add on' and year 'round conditioners with the fabulous new PRIDE O' YARD air-cooled compressor-condenser unit, styled and powered to build your profits and your prestige! It's low, sleek, beautiful—completely outmoded all other units of its type in appearance, performance and freedom from service call-backs! No wonder Janitrol dealers can count on a lion's share of the business!

The excellence of design and construction that distinguishes all models in the complete Janitrol line assures easy installation, foolproof performance, complete satisfaction after the sale. And making the sale is easier, too, because your prospects know the Janitrol name plate guarantees top quality and value.

There are Janitrol 'packaged' conditioners for waterless or water-cooled operation in every residential and light-commercial application. Models for use with existing warm air systems, and for independent operation. Combination cooling-heating units to feature for year 'round comfort. And Janitrol backs you up with powerful merchandising and advertising support, spearheaded by sales-making ads like these in magazines that reach your best homeowner and builder prospects!



Ask your Janitrol representative for the profit-making story on Janitrol's complete air conditioning line right away!

CASH-IN with the powerful sales appeal of new **Janitrol 'ADD-ON' WATERLESS COOLING**



Compare! On every count—performance, beauty, installation ease—there's more for your customers, more for you with new JANITROL ADD-ON COOLING! Beautiful PRIDE O' YARD air cooled compressor-condenser unit adds sparkling beauty to any yard, obsoletes ordinary units designed with no thought for appearance. Quiet, powerful! Compressor motor and condenser especially designed for air cooled operation. Easily teamed with most any warm air system . . . evaporator coil goes in duct, PRIDE O' YARD unit outside. No usable indoor space needed! 2, 3 and 5 H.P. sizes.

AIR-CONDITIONING MOTORS NEVER BURN OUT



Model SU100L actual size

when protected with



MECHANICAL INDUSTRIES PRODUCTION COMPANY
223 ASH STREET • AKRON, OHIO

...the best years of your business begin with...

Janitrol
HEATING . . . COOLING

Janitrol Heating & Air Conditioning Division
Surface Combustion Corporation, Columbus 16, Ohio
In Canada: Moffatt, Ltd., Toronto 15

Complete line of gas and oil furnaces, unit heaters, conversion burners, water-cooled and air-cooled summer conditioners, combination heating-cooling conditioners.

For more information about products advertised on this page use Information Center, page 14.

Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 1, Col. 1)

Women Drivers Exonerated

Thanks to air conditioning, Mrs. Ellis Mills III discovered, sooner than she would have

otherwise, that she was driving someone else's automobile.

En route from National Airport, Washington, D. C. to her home near Leesburg, Va., Mrs. Mills began to feel chilly. So she rolled up the car windows.

Instead of getting warmer, she got colder. This puzzled the lady no end until she discovered that the car air conditioner was operating. But this discovery left Mrs. Mills more baffled than ever since her car is not air conditioned.

Pulling off the road and getting out to ponder this astonishing situation, Mrs. Mills noticed that the license plates on the car were not Virginia tags—as they should have been—but Illinois plates.

So she drove to a police station and told her story to an officer. He arranged for a police escort back to the airport, where the mystery soon was cleared up and tabulated.

At the airport was Mrs. Mills' car, which was exactly like the one she had been driving—a late model, four-door, dark gray Cadillac—except that hers wasn't air conditioned. The same key fit both cars.

TV Dialing Experts Switch To Air Conditioning

"The electronic genius in every household who used to fiddle with the dials on the early TV sets is now doing business in another part of the house—he's the chap who tinkers with the controls on the air conditioner," pundits Howard L. Clary, director of sales for Bryant air conditioning equipment.

"It's not just the puttering instinct in every American male that has to be satisfied," continues Mr. Clary. "The reason is that air conditioning, like TV, has added a new home comfort factor that is so highly enjoyable that many people tinker with the controls to reassure themselves that everything is running smoothly."

Mr. Clary predicts that the day of the home tinkerer is doomed, inasmuch as air condi-

tioning is moving rapidly out of the "gee whiz" stage and into the era where air conditioning will be as common as central heating.

"We think our units should be felt but not seen," he adds. "The only thing attractive about air conditioners is the result when those cool dry breezes pass over you."

Bryant makes its air conditioners at Tyler, Texas. The company's home plant is at Indianapolis. It also has an appliance controls plant at New Lexington, Ohio.

Ideas from Norge's Pettersen

The impact of change on present patterns of appliance marketing has caught a lot of people asleep at the switch, believes J. S. Pettersen, director of merchandising and dealer programs for the Norge Div. of Borg-Warner Corp.

"This means we must cut our overhead," he explains. "We have a chain of command that goes from the manufacturer who must make a profit, to the distributor who must make a profit, and then to the retailer who also must make a profit. Therefore, we must become more efficient in our efforts."

Asked about the future of distributors, Pettersen said he thinks "the appliance distributor is going to be streamlined considerably from what he is today. But—

"We must have a distributor. We must have somebody contacting the trade to tell them about our bargains and our deals. Whether it is a branch or a distributor doesn't make a great deal of difference. You have got to have somebody out doing the job for you."

"We must sell every independent merchant as well as we can, because, unlike the automobile people, we have five or six brands alongside us in every store."

Commenting on the role of personal salesmanship in the future economy, Pettersen states

his belief that self-service never can replace personal selling of appliances, which will continue to be "sold one by one, by one person to another person." Buying a major appliance is "a major event in any person's life."

"Somebody has got to sell it to somebody else," he asserts. "I am sure that the American public is not going to be quite naive enough to walk into a store and pick up a refrigerator and say, 'this is the way I want to buy my goods.' They want to be romanced. They want to be loved. And they want to hear a complete story on this major purchase."

Sky Spirits In Japan

"Laws for Modifying the Spirits of the Sky" is a technical book on air conditioning which has become a sensation in Japan.

That title is a literal translation of the ancient ideographs. Actually this book is a technical manual, translated from the English, on air conditioning. And therein is the latest chapter of an unusual story about an American technical book in the "best seller" class. This Tokyo publication is a translation of the Trane Air Conditioning Manual!

Today as many as 300 copies of the revised, up-dated book are sold each month to engineers around the globe. The price for the 380-page volume, 8½ by 11 in., and accessories is \$6.50, about what it all costs.

D. C. Minard, Trane engineer who had succeeded Reuben Trane as president, naturally was pleased when he got a letter from Juro Muto, a Japanese engineer employed at an American air base near Tokyo. Muto wrote that he wanted to translate the book into Japanese and publish it.

Muto's professional recommendations were excellent, and Trane told him to go ahead, asking that the price be kept as "low as possible" in order that the book reach the most people

and do the most good for the industry.

Juro Muto and his publisher, Maruzen Co., cooperated. The price in Japan is 1,200 yen, or about \$3.34.

Convention Titters

Democrats were making much of the so-called "Dixon-Yates issue" at their '56 convention. However, one TV speaker convulsed us by referring to it as "the innocuous Dixon-Yates contract."

That was almost as funny as the TV interviewer who, finishing with Adlai Stevenson, said: "Thank you, Gov. Harriman."

"The name is Stevenson," Adlai snapped.

Another goodie. Senator Lyndon Johnson admonished a Texas caucus to remember words of the prophet Isaiah:

"Come let us reason together." Johnson paused, then added . . . "and not go off half-cocked."

Quotes of the Week

Recreation, like education, is for all men forward from the cradle to the grave. It is not merely for those who have suffered misfortune, nor simply to prevent men from encountering misfortune. It is to give to all opportunity for growth, opportunity to be and become ourselves.—HOWARD BRAUCHER.

It may very well be that by 2000 AD the "3 R's" will be replaced by the "3 C's" of comprehension, creation, and communication. Ability to read, to write, and to figure will not suffice for the student and citizen of tomorrow. The ability to comprehend rapidly the meaning of everything that is seen, the ability to create ideas and things, and the facility to communicate orally or visually what has been comprehended and created will become increasingly important.—J. HARTT WALSH, Dean of the College of Education, Butler university.

A man can be disconsolate with everything—God, country, wife, art—but he is never discontented with the amount of sense he has. It is always enough.—BEN HECHT.

Television today often is blamed for throttling conversation. It is the other way around. People turn in desperation to the TV screen to escape the boredom of meaningless gabble that starts from nothing and gets nowhere.—HAL BOYLE.

INSTANT-ICE MACHINES

SOME CHOICE
TERRITORIES
OPEN!

The most complete
line . . .
14 MODELS!

Production ranges from 600 lbs. to 5000 lbs. per 24 hours. Air-cooled, water-cooled. Self-contained and remote models.

THE HIGHEST QUALITY
LINE!

Precision-built . . . sold on quality,
convenience and dependability.

WRITE NOW!
for complete details . . .

LIQUID FREEZE Corporation

1133-24th ST. OAKLAND, CALIF.
TElephar 6-0424

COMING
SOON

"BOTTLE, A"

Ask Your Wholesaler
or write

WILSON MFG. CO.
Memphis, Tennessee

This announcement is neither an offer to sell, nor a solicitation of offers to buy, any of these shares.
The offering is made only by the Prospectus.

NEW ISSUE

July 24, 1956

125,000 Shares

COPELAND REFRIGERATION CORPORATION

(A Michigan Corporation)

Common Stock

Par Value \$1.00 Per Share

Price \$15.50 per share

Copies of the Prospectus may be obtained from any of the several underwriters, only in states in which such underwriters may legally offer these shares in compliance with the securities laws of the respective states.

Baker, Simonds & Co.

Bache & Co.

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Ball, Burge & Kraus

Blair & Co.

Incorporated

First California Company
Incorporated

The First Cleveland Corporation

Schwabacher & Co.

Clark, Landstreet & Kirkpatrick, Inc.

Courts & Co.

Goodbody & Co.

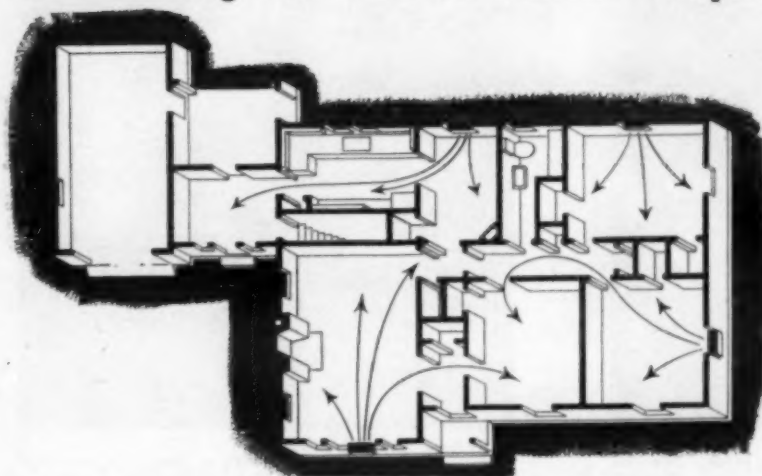
Saunders, Stiver & Co.

IDEAL
Speed-Freeze
PRODUCTS

BEVERAGE COOLERS AND
INSTANTANEOUS DRAFT
BEER COOLERS.
(With Refrigerated Faucets)

WRITE
IDEAL COOLER CORPORATION
7953 EASTON AVE. - ST. LOUIS 8, MO.

1,060 Built-Ins To Supply 'Perimeter' D. C. Distributors Sold 6,700 Room Conditioning for 265 Homes In Project Units In June, Up 134% over '55 Mo.



LONG ISLAND CITY, N. Y.—The Lewyt Air Conditioner Corp. has received an order for 1,060 of its built-in wall air conditioners from the Hallmark Construction Corp., builder of 265 homes on a 135-acre tract in East Brunswick, N. J.

The order involves about \$250,000, and is said to be the biggest ever placed for built-in air conditioners by a builder of private dwellings in the United States. The home buyer will be able to stretch his cost over 20 or more years in mortgage payments.

The method of installation is called "perimeter" air conditioning, Lewyt officials state. Individual units will be located around the perimeter of each dwelling so that cooling temperatures will be equalized throughout.

Harry Sherman, president of the Hallmark firm, said the units would have cooling capacities up to 1 ton, and the number of units used would depend on house size and its exposure to the sun.

Sherman described the order for the 1,060 units as "mandatory in these modern and competitive times." He said that home buyers were doing more and more shopping, seeking as many modern conveniences as their money could buy.

Sherman's firm is building homes in ranch, split-level, and cape cod design. They will be priced in the \$16,000 to \$17,500 range. The first models are expected to be ready soon.

Houses will have seven and eight rooms, and some will feature four bedrooms.

DIAGRAM showing "perimeter" location of built-in wall air conditioners as proposed to equalize cooling temperatures throughout each of 265 homes in an East Brunswick, N. J. building project.

WASHINGTON, D. C.—Local distributors sold 6,700 room air conditioners during June, the Electric Institute of Washington, announced recently.

This is 134% more than in the same month last year, despite prevailing cooler weather this summer, William G. Hills, managing director, indicated recently. A year ago June, they sold 2,860 units in the area covered by the Potomac Electric Power Co.

For the, first six months of the year, they sold 20,921 room units of 1 hp. and under, compared with 13,669 in the same period of 1955. This is a gain of 53% over last year.

According to figures compiled by Hills, there have been 114,131 room air conditioners sold from 1946 through June 1956.

Including the Arlington, Fairfax, and Alexandria areas of Virginia that make up metropolitan Washington, he estimates the sales figure for the period at approximately 137,000 units, or about one for every 10 persons in the area.

Hills estimates that the sales total for the complete year 1956 will hit 32,000 units.

To help promote sales for next year, the Institute is preparing for its first Air Conditioning, Ventilating, and Space Heating Exposition that will be held in the Sheraton Park hotel next Feb. 8-10. It will be open to the public without charge.

Response to the idea from

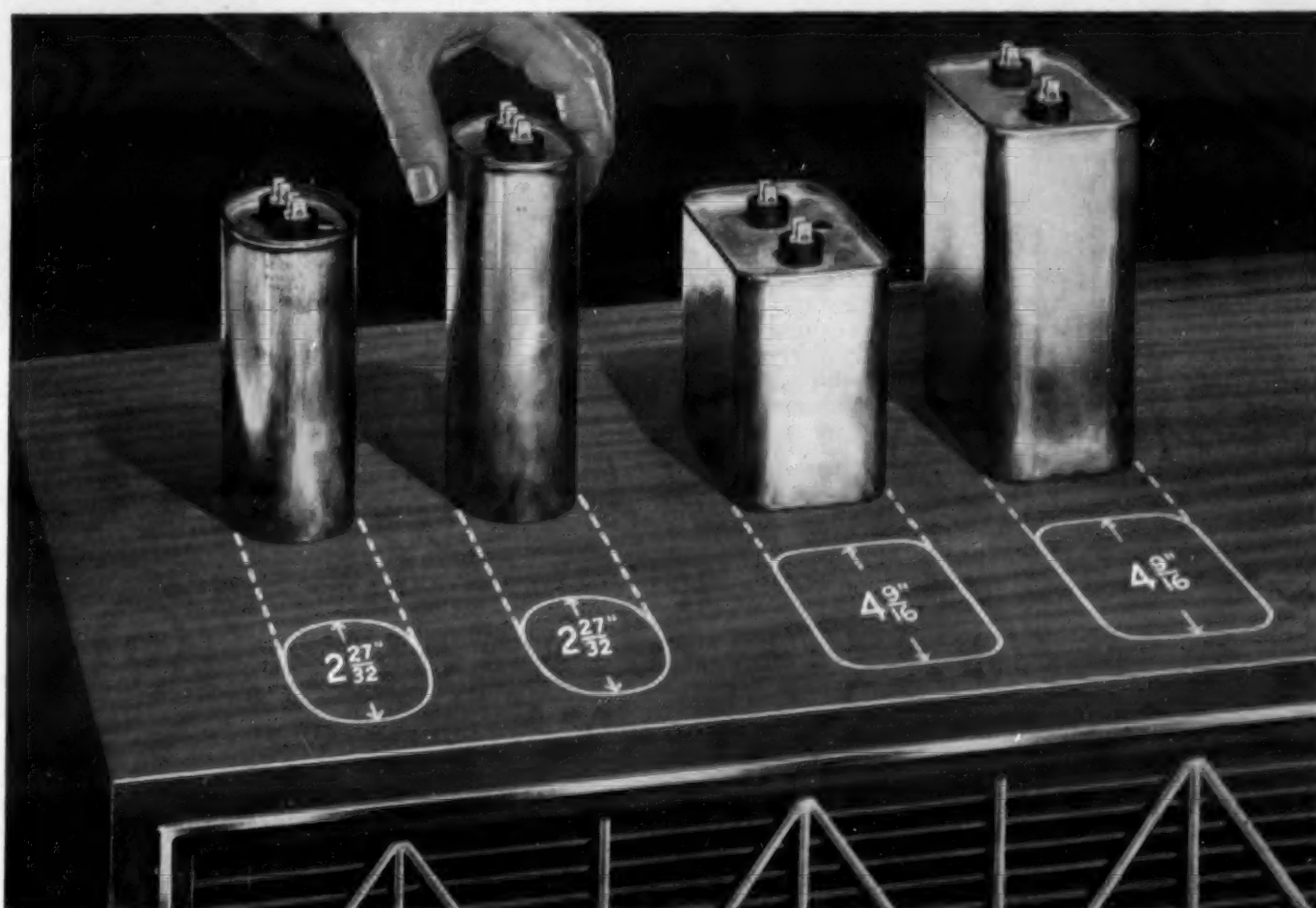
manufacturers and distributors has been excellent, Hills commented. Much of the exposition space has already been reserved.

The year-by-year sales estimates for the Pepco territory—covering the District of Columbia and Prince Georges and Montgomery counties in Maryland—are as follows:

1946-47	1,200
1948	3,000
1949	4,712
1950	10,557
1951	4,801
1952	10,212
1953	16,942
1954	12,250
1955	29,536
1956 (6 mos.)	20,921

To Condition Store

AUGUSTA, Ga.—F. W. Woolworth Co. is planning an air conditioned self-service store in Daniel Village. The new building will front 100 ft. with a depth of 150 ft.



New G-E capacitors for air conditioners give you more μf in the same base size

SAVE MAN HOURS!

USE **Stic-Klip**
INSULATION ANCHORS



Typical ductwork application

Stic-Klip is unsurpassed for a permanent bond any type insulation to flat, curved or irregular surfaces of metal, masonry or wood. No drilling, welding, furring or puncturing. Easy to apply. Saves man-hours of installation time. Suitable for ductwork, heating, ventilating systems, cold storage or acoustical installations. Write now, for details and illustrated booklet.

Write: **Stic-Klip**
MANUFACTURING CO. INC.
68 Regent Street, Cambridge 40, Mass.

10 REASONS FOR USING G-E AIR CONDITIONING CAPACITORS



10. PYRANOL LIQUID IMPREGNANT makes possible minimum size, highest quality capacitor for a given rating.

PROBLEMS OF HIGHER POWER FACTOR correction for new room air conditioners are minimized with newly designed, higher microfarad (uf) Pyranol capacitors now produced by General Electric.

HIGHER CAPACITOR RATINGS have been achieved with minimum increase in capacitor size and with no increase in base dimensions. Thus valuable space is saved and installation of higher rated capacitors can often be made without expensive changes in existing air conditioner design and layout.

PROPER APPLICATION of General Electric capacitors will assist you in improving power factor of all presently manufactured air conditioners, including the new 2-ton sizes. Your G-E Sales Engineer has the training and experience to assure that you get the capacitor you need. He can solve your special problems concerning power factor and optimum capacitor space utilization.

DEVELOPMENT OF THESE NEW CAPACITORS is further evidence of General Electric's continuing progress in anticipating and meeting the expanding needs of the air conditioning industry. Whatever your requirements, you can look to General Electric for the high quality capacitors you want—shipped when and where you need them.

*Trademark of General Electric Co.

442-33

Progress Is Our Most Important Product

GENERAL ELECTRIC

1,093 Ft. of Refrigerated Cases Highlights Giant New Supermarket



MEAT department with special conveyor behind and cases for luncheon meats at the far end.



CLOSE UP of the pre-packaging conveyor. The far end goes directly into the meat cooler.



CASES for luncheon meats with a view into the meat holding cooler.

Operator Tries To Reverse the Trend Toward Vending Machine Type Market

(Continued from Page 1) firm, it was further pointed out. The king-size super has 56 McCray refrigerated self-service display cases, totalling 552 linear ft. Built into the structure are three low temperature and 12 normal temperature coolers totalling 4,700 refrigerated sq. ft., which contribute adequate storage for the perishable departments. These coolers are all refrigerated by coils and condensing units furnished by the McCray

ished in coral) located at the ends of gondolas for the display of smoked meats.

5 Coolers Age, Sharp Freeze Fresh, Smoked Meats

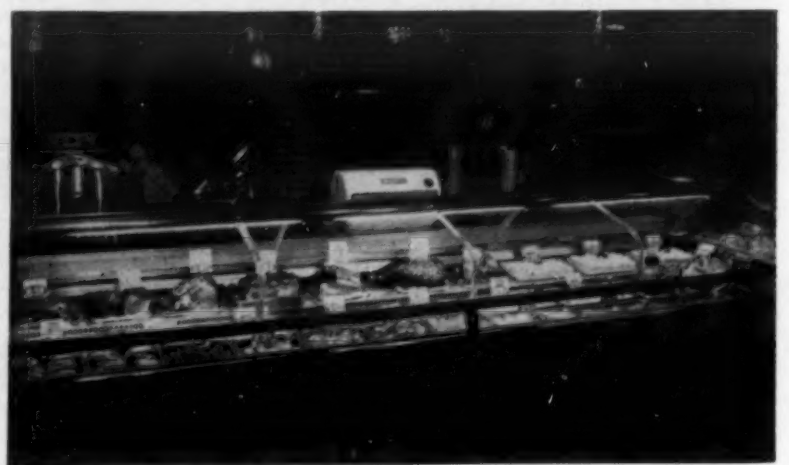
There are four coolers for the receiving, holding, ageing, and sharp freezing of fresh meats and one for smoked meats. The fish department has one iced service case (11 ft.) for fresh fish; two low temperature cases (22 ft. finished in blue) for frozen fish; and one fresh fish cooler. In the frozen food department there are 12 low temperature cases (132 ft. finished in blue). These cases are placed back to back in an island location. There is one large cooler for frozen food storage.

Refrigerated Pass-Through Rack Backs 66 Ft. Of Produce Cases

The produce department has six cases (66 ft. finished in green) for refrigerated fresh produce, with a refrigerated pass-through rack from the produce packaging room to the back of the display cases. There are separate coolers for wet produce, dry produce, and banana storage.

The dairy department consists of three cases (27 ft. finished in yellow) that have multiple shelves. Across the aisle is a dairy cooler with long, hinged glass self-service doors facing the display cases.

The delicatessen department



DELICATESSEN case which has a special molded glass hood for product protection.

has four cases (44 ft. finished in white) for the display of salads and other prepared delicatessen foods.

In the ice cream department are three low temperature cases (30 ft. finished in pink) for the display of ice cream which is manufactured in an ice cream processing room separated from the display by a wall of sliding glass doors. An ice cream hardening room is part of this unit.

The bakery, which is completely open to public view (it has "Thermopane" windows), includes a dough retarding cooler and a freezer for baked goods.

The new market is the third outlet of Henry J. Eavey, Inc.,

which is headquartered in Richmond, Ind. The other stores are located in Anderson and Middleton, Ind.

Food Shopping 'Should Be A Happy Adventure'

Stating that he thinks shopping for food "should be a happy adventure instead of another housekeeping chore, Eavey said the Fort Wayne unit "is our answer." He added: "We are trying to reverse the trend toward the cold, clinical, vending-machine type of supermarket."

"It is our hope," Eavey commented, "that the public will avidly accept such an emporium (Concluded on next page)

BETZ

BABY BETZ

QUALITY AT LOW COST

The most popular and versatile unit in the industry • Unique design is fully patented • For Back Bars, Direct Draws and limited space applications • Twin air flow cooling • Life lubricated motors with overload protection • All aluminum cabinet • Capacities 85 to 150 BTU per 1° TD.

See Them at Your Wholesalers

BETZ DIVISION
BOHN ALUMINUM & BRASS CORPORATION
DANVILLE • ILLINOIS

Since 1901

Tank Type WATER COOLERS

- ◆ Extra-large storage
- ◆ Safety from freeze-up
- ◆ Fast hourly recovery
- ◆ 20-year life construction

Capacities: 5 to 500 g.p.h.
Storage: 2 to 240 gals.

Water coolers for all uses factory-packaged with your condensing unit. Write for literature.

FILTRINE MFG. COMPANY
218 W. PROSPECT ST. • WALDWICK, N. J.

REFRIGERATOR - FREEZER COMBINATIONS

MEET THE BIG DEMAND FOR A LOW COST

ICE CUBE MAKER

THAT FREEZES OVER **250** CUBES EVERY FOUR HOURS

Model ICM-16-P
KUBEMASTER

16 quick release trays
Large storage drawer
All steel construction

Sell the ice cube maker that freezes and stores cubes for pennies per bushel. No headaches from complicated machinery when you sell KUBEMASTER to taverns—restaurants—hospitals—clubs—grocery stores or wherever there is a need for a good ice cuber.

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HUDSON, WISCONSIN
WRITE, WIRE OR PHONE TODAY

DRY BEVERAGE COOLERS MILK DISPENSERS

UPRIGHT FREEZERS BEER DISPENSERS



PRODUCE department with pass-thru rack behind. Ice cream cases are in the background with sliding glass doors giving access to the ice cream processing room.



DAIRY cooler with hinged glass doors for self-service shopping.



OVER-ALL shot showing gondola arrangement and coffee roaster in the center.

Giant Market--

(Concluded from preceding page) because of the varied merchandise offered in attractive surroundings under comfortable and convenient conditions."

Eavey's objective was to make the operation of the new market as efficient as possible. One of the techniques designed to help achieve this goal is the use of "case stocking," with nightly stocking eliminating the need for extensive storage space.

Shelf Stocking Needs More Floor Area

This method of shelf stocking requires considerably more lineal feet of gondolas and more square feet of floor area, but experience has proved that it helps materially to cut dry stocking costs, it has been noted.

The plan for the market included such features as greater aisle space (gondolas are separated by 6-ft.-wide aisles); more checkouts (there are 14, each staffed by four persons to minimize delays); and a large parking area (the paved lot can accommodate about 1,000 cars, with no stall more than 100 yds. from a store entrance).

It also included bigger-than-usual production areas (for on-premise manufacturing of baked goods, ice cream, etc.) and leasing of space to tenants for the display and sale of candies, flowers, and other items.

The huge German-made coffee roasting machine, which has a capacity of 500 lbs. an hour, is believed by Eavey's to be a supermarket innovation. Located in the center of the store and facing the entrance, it extends from the basement up into the rafters.

Use of "Plexiglas" tubes and hoppers permit shoppers to watch the coffee-roasting operation. The machine includes an aroma chamber which wafts the aroma of roasting coffee around the "Spice Island" section.

Plexiglas parts are also used in the peanut and cashew butter making machine so shoppers can see how the butter is produced. As indicated, the "see-it-made" idea is also extended to the ice cream plant and the bakery.

A stainless steel ice cream machine turns out about 2 gals. a minute. The liquid ice cream mix is delivered by tank truck and pumped directly into refrigerated storage tanks.

Bakery Turns Out 936 Bread Loaves an Hour

The bakery can make 936 loaves of bread an hour. It offers 75 kinds of bread. The aroma of fresh baked goods is distributed through air conditioning ducts.

Some of the other features of the market are the lobster tank, which duplicates bottom-of-the-sea conditions; the delicatessen

with rotisseries for preparing poultry and meat; a post office substation; a pharmacy, liquor store, and candy shop (all concession stores); camera, cosmetic, and hardware and garden tool sections; and the mezzanine where the public lounge and the

market's offices are located.

A huge corrugated, translucent, plastic marquee, supported by two big wooden arches, provides cover for a 16,000-sq. ft. solarium and bathes it in lemon-yellow radiance, even on cloudy days.

In the solarium, which is actually the foyer to the main floor, are a flower shop with a

walk-in cooler and a small greenhouse; canary and parakeet cages, and a grapefruit tree. Built into one wall of the solarium and visible from the store's interior are three aquarium tanks.

The market, which has a staff of some 215 persons, will be open 12 hours a day (9 to 9), seven days a week.

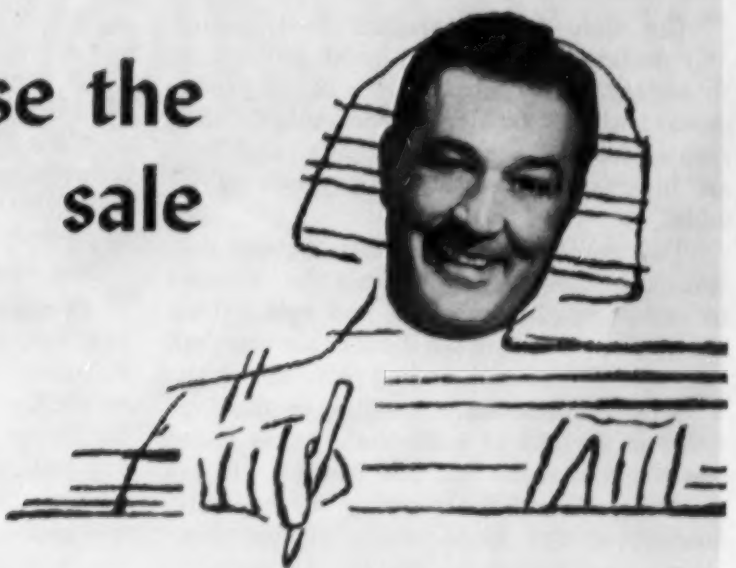
If your prospect acts like this



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to close the sale



TODAY the demand on working capital is heavy. To keep their cash and usual lines of credit for current operations, more and more of your prospects prefer to finance their purchases of major equipment. Our tailor-made Refrigeration Equipment Plan can help you

build prestige and close sales. Be sure your proposals are complete by including information about buying on the nationally popular **COMMERCIAL CREDIT PLAN**. Call our office in your city or write **COMMERCIAL CREDIT CORPORATION**, 14 Light St., Balto. 2, Md.

COMMERCIAL CREDIT CORPORATION • A service offered through subsidiaries of Commercial Credit Company, Baltimore... Capital and Surplus over \$190,000,000... office in principal cities of the United States and Canada.

SO HALSTEAD & MITCHELL ENGINEERS SAID:

"LET'S STOP COOLING TOWER RUSTING and ROTTING!"



Halstead & Mitchell

BESSEMER BUILDING, PITTSBURGH 22, PA.

RUSTING

There's no "one-coat" protection which will stop cooling tower rust. Needed are super-strength bonding of protection to metal, toughness, inertness, flexibility, and a water-tight barrier. Only by Halstead & Mitchell are you offered the 3-coat protection of Vinsynite, Vinyl Zinc and chlorinated rubber — the most advanced protection ever devised to prevent cooling tower steel from rusting.

ROTTING

We do more than praise the long life of wood used in our wetted decks — we are the *only* manufacturer who offers a 20-Year Guarantee on wetted deck wood against rotting or attack by fungus.

AT LEADING WHOLESALEERS EVERYWHERE

They'll
Do It
Every
Time
by
Jimmy
Hatlo



Who's on First Base?

Is this a "dangerous" trend? Too many manufacturers let their advertising agencies do the job of merchandising their advertising to dealers. Secondly advertising agencies pass the buck to media. Who's in charge?

This merchandising job should be done only by the advertiser's salesman. The man who contacts the dealer should be the Key Man.

A differentiation should be made between the merchandising of advertising and the merchandising of merchandise, too. The former is "using advertising as a tool to gain dealer support for the advertised product."

An advertiser's salesman has merchandised his advertising when he "convinces a dealer that this sales-building power will produce more sales and profits for him, if he makes effective use of it, and then shows the dealer how to use this power."

But many producers are turning over

this vital task to outsiders. This is bad because (1) neither agencies nor media can sell the dealer as well as the advertiser's salesman, and (2) salesmen may get the idea that they don't have to merchandise their advertising—the agency and the media will do the job.

When or if the latter happens, it's goodbye to efficient marketing of advertised products.

Presumably because of client pressure, agency merchandising departments have been growing bigger in recent years. With the cost of this "extra" assistance rising steadily, agencies are putting the heat on media for "merchandising service." To be sure, any advertising medium should do all it can to help the advertiser's salesman merchandise that advertising effectively.

However, the manufacturer is missing a bet in the dealer relations area when he doesn't let his own field men do this job.

Good Words from Pope Pius

Undue government interference with private enterprise, excessive taxation of business profits, and unfair business competition have been deplored recently by His Holiness, Pope Pius, XII.

The Holy Father praises businessmen, and declares they are of great importance to society. They must have a broad professional training, be alert to economic developments, foresee consumer trends, and have an insight into consumer psychology, he adds.

To operate well, the Holy Father continues, businessmen must not be impeded by complicated regulations and restrictions. They also should have honorable competitors who do not seek unjust privileges.

The businessman, according to the Pontiff, has a right to hope that "taxes which are too numerous and too heavy" will not be imposed and "take away an excessive amount of the gains which he deserves."

No one denies, he asides, the necessity of watchfulness on the part of public authorities, which should be to the advan-

tage of both the businessman and the public.

But, he emphasizes: "We wish the state would find it possible to remain within the limits of its function of complementing private enterprise, overseeing it, and if necessary, aiding it." Government, should not substitute itself for private enterprise when the latter "acts successfully and usefully," he declares.

As a class, according to the Pope, businessmen work for all the people to preserve them from economic hardships. They want to protect jobs and salaries and provide for illness and other emergencies.

In many cases, the social security system has not succeeded in ending all painful economic conditions and in healing all wounds.

So it is important, he goes on, that attempts to achieve security do not result in impeding fluid business operations, run the risk of killing initiative, or place such heavy restrictions on the employer that all his efforts are discouraged.

To which all we can say: Amen!

Work done by electricity in the average American home annually equals the labor of 30 men or women.

And the average industrial laborer has the equivalent of 222 electrical helpers assisting him.

All at a relative cost of pennies for an hour's work, instead of dollars!

Blessed are the hard of hearing for they miss much small talk.

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

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REG. U.S. PAT.
Office:
Est. 1936

AIR CONDITIONING
& REFRIGERATION **NEWS**

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Business News
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F. M. COCKRELL, Founder

'The Conscience of the Industry'

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VOLUME 78, No. 17, SERIAL No. 1,432, AUGUST 27, 1956



FEDDERS 7 1/2 AMP. UNIT DRAWS ONLY 850 WATTS

Fedders-Quigan Corp.
Maspeth, L. I., N. Y.

Editor:

We are enclosing a letter which we wrote R. J. Heier, Chairman of the Electric Association, Air Conditioning Group, of Chicago, which is self-explanatory.

We trust you will find this information of some interest and, if at all possible, would appreciate your passing it on to Mr. Heier.

GEORGE H. DOERFLER
Product Manager

(Letter to Heier follows):

I noticed in a recent issue of AIR CONDITIONING & REFRIGERATION NEWS that your organization published some data with regard to air conditioning units. I noted with particular interest that under the listing of the 3/4 (Special 7 1/2 amp.) unit there was printed a wattage of 1,050.

I would like to make mention that the Fedders' Model 68BJ (7 1/2 amp.) uses only 850 watts in its operation.

GEORGE H. DOERFLER
Product Manager

DUPONT CORRECTS DATA ON GASKET SWELLING

E. I. du Pont de Nemours & Co.
Wilmington 98, Del.

Editor:

We were interested in reading the discussion by Paul Reed in your July issue of the comparison of dichlorodifluoromethane and monochlorodifluoromethane.

We noted a few possible errors in Table 10 and thought you might like to have our laboratory comments.

The major one involves showing "Polysulphide GR-1" as a single gasket material. Polysulphide and GR-1 are two distinct-

Per Cent of Swelling of Gasket Materials in 'Freon' Compounds

Gasket Material	'Freon-12'	'Freon-22'
Buna N	2.0	6.0
Neoprene GN	0.0	0.0
Polysulphide	0.8	2.5
GR-1	5.6	16.0
Natural Rubber	6.0	18.0

ly different materials and vary a good deal in swelling characteristics as you will note from the attached table.

Comparison of this table with your Table 10 indicates several other points of difference.

Handy Way to Subscribe

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Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, commercial and home refrigeration: manufacturing, contracting, distributing, retailing, and servicing. Read the industry's newspaper for profit every week. Only \$6.00 per year, 52 issues (U.S. and Canada). Foreign: \$10.00 per year.

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Two Mfrs. Increase Merchandising Aids, Advertising To Promote Home Freezers

Dealer To Build Repeat Business with \$25 Checks, Aids Market's Frozen Food Sales

CHICAGO — A new freezer food plan that permits the appliance dealer to tie in with local food stores and to build repeat business with a series of "food checks" has been announced by the refrigeration department of Hotpoint Co.

Basically, Hotpoint's new "Supermarket Freezer Tie-In Plan" works this way:

How Freezer Tie-In Plan Operates

The dealer goes to the management of his local supermarket or independent grocer and offers to display a Hotpoint food freezer in the store.

Attached to the freezer are signs stating that purchase of the Hotpoint freezer entitles the purchaser to obtain "free" \$100 to \$150 dollars worth of food from the store where the freezer is displayed. A similar sign is displayed in the dealer's store.

Newspaper advertising is coordinated on an "early-week" basis with frozen food specials advertised for Monday, Tuesday, Wednesday selling. The appliance dealer runs freezer ads in food pages at the same time.

After the purchase of the freezer, for four successive weeks or months (when the monthly payment is made) a \$25 food check is issued by the dealer for purchase of any foods she desires. There is no limit to the size, brand, or type of food purchased and no specific time element.

To obtain her weekly or monthly "Food check" she has to visit the dealer's store four times. To obtain her food she has to visit the supermarket or independent store four times.

Plan Gives Dealer 4 Extra Chances To Sell

What the plan does, according to David Grigsby, merchandising manager, refrigeration department, Hotpoint Co., is get the purchaser to visit the dealer's store at least four times which provides him with four extra opportunities to sell her additional appliances.

Dealers tying into the promotion will be supplied special shopping bag stickers, ad mats, window posters, freezer posters, banners for instore display, handout folders, and an over-all promotion booklet on how to use all material, Grigsby said.

The \$100 to \$150 food allowance will be made depending upon the size of the freezer purchased by the consumer.

Grigsby passed on this advice to dealers in small communities: "Check around in the com-

munity and find out what is the most popular grocery or independent store. Approach him first since most of his trade will probably be in brand named frozen foods and he draws most traffic.

"In addition, contact your local newspaper for simultaneous running of planned publicity stories, to be run in connection with your ads as well as the local grocery store's ads. In this way, you create added attention in your community."

Arkansas Baptists To Be Cool

EARLE, Ark.—A five-ton air conditioner unit has just been installed at Earle Baptist Church here.

Freezer Mfr's. Food Service Div. To Push Program Tailored to Each Dealer's Needs

MILWAUKEE—Formation of a new Food Service Div. of Ben-Hur Mfg. Co. has been announced here by Edgar Jackson, Ben-Hur vice president in charge of sales.

Jackson said Virgil Linne-mann has been named head of the new division. William G. Tannhaeuser Co. here has been designated advertising and marketing counsel for the division.

"The result of months of exhaustive research and careful testing in major marketing areas, including a nationwide survey of housewives, the new Ben-Hur Food Service Div. has a dual purpose: to help food freezer owners realize the full potential value of their equip-

ment and to assist food service operators throughout the U. S.," the announcement said.

Jackson and William Tannhaeuser, president of the advertising firm working with the Food Service Div., stated that merchandising aids, backed by a comprehensive advertising and promotion campaign tailored to fit individual dealer's needs, will be made available to food services through the new division.

"The emphasis throughout will be on a practical local level approach," it was pointed out. "Included with this material will be new motion picture films, radio and TV films and transcriptions, advertising mats,

promotional kits, and other merchandising helps, including food service brochures."

The new division is now setting up a nationwide organization with representatives in all leading markets.

The division "is adapted to the increasingly vital role food services are playing in the frozen food industry through the sale of frozen foods in quantity at quantity prices."

Jackson claimed the project is "completely unique in the field of food freezer manufacturing and marketing and in the frozen food industry as a whole."

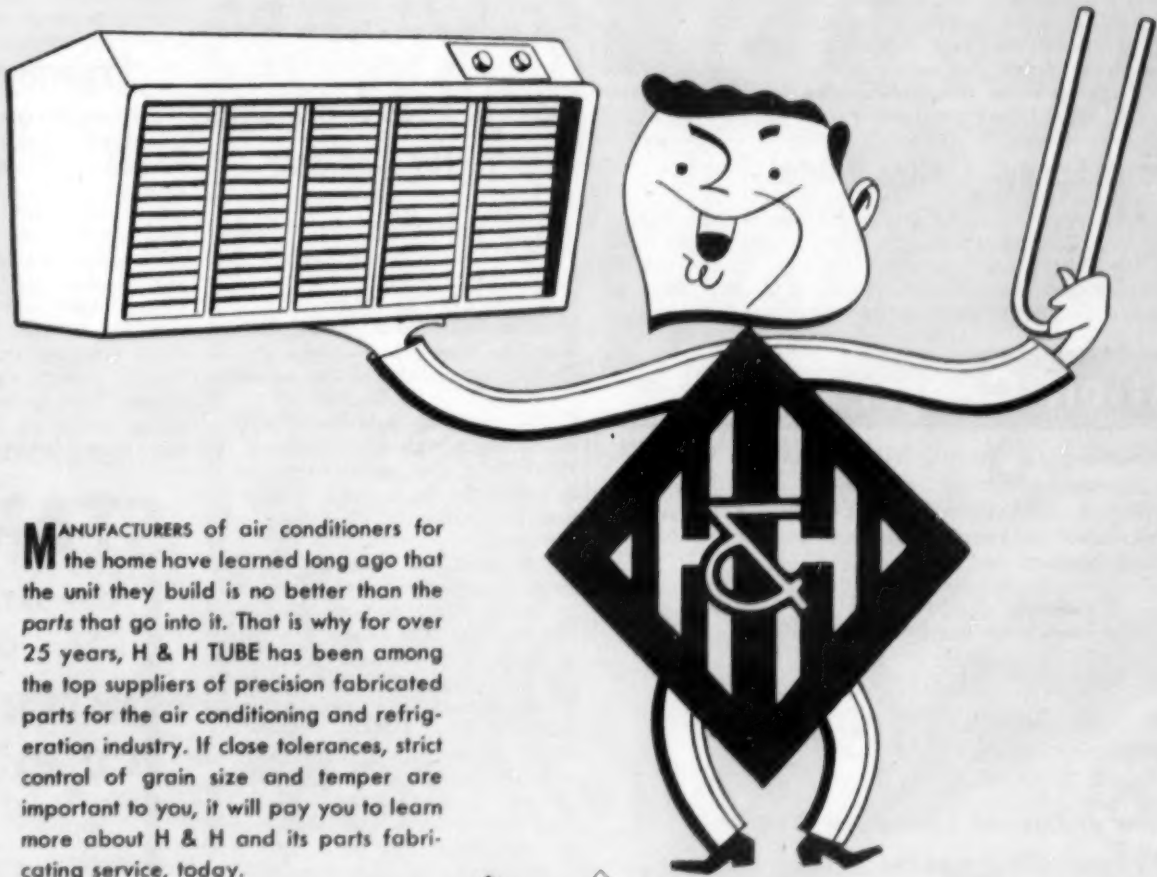
Norge Freezer Sales Up

CHICAGO — Home freezer sales by Norge dealers in June jumped 360% over the 1955 month to set a record.

"Sales by distributors increased 217%," Norge said.

Only PART good

without PARTS by H & H



MANUFACTURERS of air conditioners for the home have learned long ago that the unit they build is no better than the parts that go into it. That is why for over 25 years, H & H TUBE has been among the top suppliers of precision fabricated parts for the air conditioning and refrigeration industry. If close tolerances, strict control of grain size and temper are important to you, it will pay you to learn more about H & H and its parts fabricating service, today.

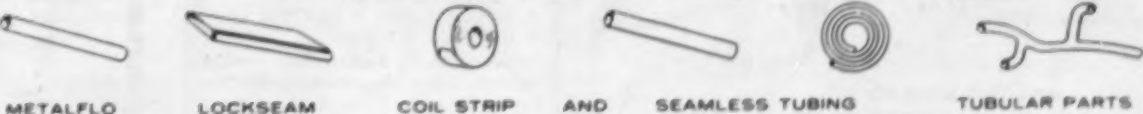


Expect the BEST brass and copper products from

H & H Tube

AND MANUFACTURING COMPANY

271 N. Forman Avenue, Detroit 17, Michigan • Offices from Coast to Coast



Tubing used for straight lengths and fabricated parts is available in a range of sizes from 3/32" O.D. through 1 1/2" O.D. in wall thicknesses of .065 and lighter. H & H 50' standard refrigeration coils are available in sizes from 1/4" O.D. to and including 3/4" O.D. Furnished with capped, plugged or open ends according to customer specifications.

You can take a 350 lb. appliance UP STAIRS—ALONE! WITH **HYKER** WHY PAY TWO MEN? SAVE \$10 A DAY

WALKS UPSTAIRS YOU DON'T DRAG IT!

write "HYKER" 910 W. Lycoming • Phila. 40, Pa.

What's New

Pocket Computer Dials Discounts, Selling Prices



KEY NO. F-840

BALTIMORE—Recently introduced by Ottenheimer, publishers here, was a Bakelite rigid vinyl sheet pocket size computer for figuring discounts and selling prices.

Perspiration, moisture, grease, oil, dust, and dirt can be wiped off the computer without leaving stains, the company said. By turning the rotating dial with one finger, the answer to nearly all discount problems is brought into view, it was added.

Numbers are printed in alternate black and red and are protected from rubbing off by an overlay. The dial is spun until the proper cost price per unit, dozen, or gross appears at the top of the cutout on either side. Then reading down the right side of the cutout for per cent mark-up of cost price, or on the left side for per cent of selling price, yields the exact unit selling price opposite it on the rotating dial, the company declared.

The "Discount Dialer" is about 3 1/4 in. wide, 4 1/4 in. long, and retails for \$1.



WeatherKing Heat Pump Available In 2-10 Hp.

KEY NO. F-843

ORLANDO, Fla.—Now available for general marketing are 2 to 10-hp. heat pumps manufactured here by WeatherKing of Florida, Inc., it was announced by the firm.

Features claimed for the heat pumps include the patented "Aqua-Air" jet which provides "maximum efficiency" of the condenser-chiller during the heating operation, an improved four-way automatic reversing cycle, six-row coils to give maximum heating and cooling, and "Cupro-Nickel" condensers for long life.

All units are water-to-air type and are available both as self-contained or with separate compressor and fan sections for remote installation, the firm pointed out.

Fedders Adds Continuous Convector-Radiator

KEY NO. F-844

TRENTON, N. J.—The Fedders "CTS," a new continuous convector-radiator, said to combine the best feature of convectors and wall-fin, has been added to the heating line of Fedders-Quigan Corp., it was announced here recently.

The company said the CTS provides even, reliable heat, up to 3,930 B.t.u. per lineal foot, and is designed to do a long wall with only a minimum of piping connections.

Specifications include: element tubes which are expanded to fit over adjoining sections for sweat connections "in seconds"; ribbed aluminum fins which are evenly spaced by die-formed collars to increase metal to metal contact between fin and 3/4-in. copper element tubes; and, interlocking fronts for adjacent sections which present a smooth assembled appearance without the necessity of joining strips.

Standard CTS is available in 18-gauge top and front with 16 and 14-gauge available for extra-heavy duty.

The convector-radiator comes in three basic heights, 4 or 6 in. deep, and in any length from 16 in. to 5 ft. 4 in.

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- REFRIGERATORS • FREEZERS and
- BEVERAGE COOLERS

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Should now be sent to:
UNIVERSAL DIVISION
THE HORTON COMPANY
915 Liberty Ave., Pittsburgh 22, Pa.

Air Conditioning & Refrigeration News, August 27, 1956

Portable Heater Offers Safety Features

KEY NO. F-845

ROCHESTER, N. Y.—A small room portable electric heater, new throughout in design, colors, and features, is now being manufactured by Electro-mode Div. of Commercial Controls Corp. here.

The new unit is made in manual and automatic models and both are available in two-tone "Driftwood" or "Desert Sand," with the front and back of the heater in softly harmonizing shades.

Safety features include the "Safety Grid" heating element, a

finned aluminum casting with all electric wires sealed inside. A built-in safety switch automatically shuts off the current if for any reason the air flow should stop, caused by the heater being knocked over or covered as with a drape.

Among other features of the new model are a wider handle across the top of the heater and a new streamlined "On" and "Off" switch, "which emphasize the modernistic design of the heater." A slow motion fan provides even heat distribution. The automatic models have an hydraulic action thermostat, which is activated by and regulates the room temperature.

Electronic Air Filter Handles Higher Velocities

KEY NO. F-846

MCKEES ROCKS, Pa.—A new electronic air cleaner, known as the "Trion HEV," has been introduced by Trion, Inc. here.

One of the most important features of the new air cleaner for commercial and industrial applications is its closer coordination with the air velocity and space requirements of air conditioning coils. Air cleaners are placed in the return air duct upstream of the cooling and heating coils.

Until now, however, they could not deliver maximum cleaning efficiency at the high air velocities at which these coils normally operate. It was therefore necessary to increase the size of the duct at the point of the air cleaner, to accommodate the necessarily greater face area of the cleaning unit, and to decrease the air speed.

The new Trion HEV unit accommodates much higher air velocities with greater cleaning

efficiency and can more closely match the face area of the cooling and heating coils.

Standard electronic air cleaners are rated at 90% cleaning efficiency for an air velocity of 333 f.p.m. The Trion HEV is rated in excess of 95% at 450 f.p.m., and even at 500 f.p.m. its efficiency is well in excess of 90%.

These cleaning efficiencies are based upon the National Bureau of Standards dust-spot test method using normal atmospheric air.

The Trion HEV, when operating at 95% air cleaning efficiency, is only three fourths as large as a standard electronic air cleaner which operates at 90%.

Trion operates on the principal of electrostatic precipitation. All dirt and foreign matter entering the unit are given a high voltage electrostatic charge. These charged particles are then attracted to grounded plates over which the air must pass.

Experimental Finish To Feature Durability

KEY NO. F-847

WILMINGTON, Del.—A universal appliance finish, based on a new polymer and designated tentatively as MD enamel, was announced recently before the American Home Laundry Manufacturers' Association by Dr. Roy B. Davis, assistant director of the research section of the Du Pont Co.'s Finishes Div.

Still months away from commercial production but currently being tested on production finishing lines, MD enamel was de-

scribed as "the most durable coating ever made from organic materials for refrigerators, ranges, and home laundry equipment."

It is "very much harder than currently used enamels, and considerably more resistant to marring and chipping," the announcement said. "MD is practically unaffected by prolonged exposure to high temperature soap solutions."

Dr. Davis noted that it also has excellent resistance to yellowing and freedom from staining.

Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised

(list name, page, and issue date)

.....
.....
.....
.....
.....

What's New or Current Literature Available

Key No.	Key No.
Key No.	Key No.
Key No.	Key No.
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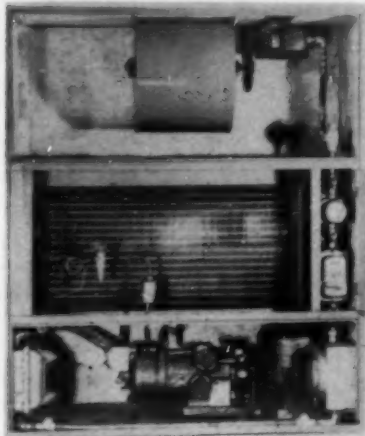


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Explosion Resistant Packaged Unit Developed



KEY NO. F-848

CHARLESTON, W. Va.—A new explosion resistant packaged air conditioner for installation in hazardous areas has just been announced by Conditioned Air, Inc. here.

Guy Holsclaw, president of the West Virginia concern, explains that there are extensive marketing opportunities for these units on a non-seasonal basis to industries throughout the country, especially

to the chemical, petrochemical and petroleum industries, and to the mining industries.

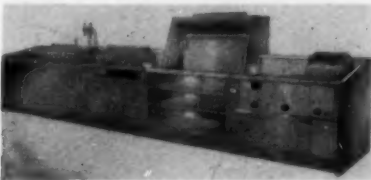
His announcement coincided with the acceptance of the explosion resistant air conditioners by the Safety Department of one of the country's leading chemical manufacturers for installation in one of their Kanawha Valley plants.

Conditioned Air will market explosion resistant packaged units in 3, 5½, and 7½-ton sizes. They are suitable for installation in all Class I, Group D areas.

The new units are fabricated by Conditioned Air utilizing Worthington hermetic compressors, condensers, and coils. All wiring is inspected by the West Virginia Inspection Bureau, a commercial organization serving as inspection agency for the National Board of Fire Underwriters.

Each individual electrical component is approved and bears the Underwriters label, except the motor, which is hermetic and is under positive gas pressure. Motor leads are inspected and approved. Fans are of non-sparking construction with static conducting belts.

United-American Offers Complete Backbar Lineup



KEY NO. F-849

WATERTOWN, Mass.—United-American Div. of Lewis-Shepard recently introduced a complete backbar lineup here, it was announced.

Consisting of a 66-in. fountain unit, a 12-in. cleansing section, a 48-in. sandwich unit, a 48-in. grill stand, and a 48-in. hot food unit, the lineup is of stainless steel and is said to offer all facilities for quick serving of hot or cold dishes and ice cream.

The fountain unit holds 30 gals. of ice cream and has six syrup jars with stainless steel pumps in addition to four crushed fruit jars, covers, and ladles, the firm stated.

Dipper vat has a stainless steel running water disher vat with chrome-plated overhead faucet,

stainless steel refuse chute and refuse container, and a stainless steel front enclosure.

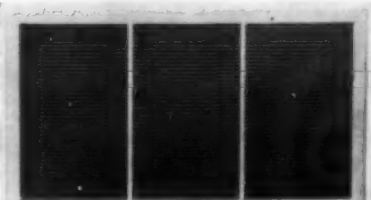
Sandwich unit has toaster space besides 11 food pans and two self-closing bread drawers. A 4½-in. high plate shelf is set under the laminated maple cutting board.

Refrigerated storage compartment has removable adjustable shelves with blower-type evaporator.

The 48-in. long grill stand is also of all stainless steel, according to the manufacturer. It will accommodate any fryers or grills desired, is equipped with collared openings for either gas or electrical outlets. Air duct takeoffs can be supplied for either up or down draft.

Hot food unit heating wells can be used with water for moist heat or without for dry. It is equipped with seven deep stainless steel insets with covers and a large meat pan. Three deep drawn seamless stainless steel heated drawers mounted on roller bearing slides are self-closing.

Horizontal, Vertical Grille Line Introduced



KEY NO. F-8410

LIMA, Ohio—A complete line of attractive horizontal and vertical grilles for return air, combustion air, ventilating, and cooling systems is being manufactured by Lima Register Co. in its large new plant here, it was recently announced.

Another part of Lima's expansion program, the new line includes series 15H horizontal grilles available in 57 sizes, and series 15V vertical grilles in 56 sizes.

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Packaged Flake Ice Plant Designed

KEY NO. F-8411

EL MONTE, Calif.—Packaged ice plants that will deliver from 1,000 to 20,000 lbs. of ice in flaked form per day are being manufactured by Moore & Hanks here.

The plant consists of an automatic ice making unit, air-cooled condenser, galvanized steel-lined redwood storage bin with counter-balanced steel access doors, and a "Freon" compressor unit in a weatherproof housing.

The plant is skid mounted so that it may be easily moved from one location to another at will. All electrical circuits and controls are factory wired, ready to run.

Moore & Hanks is currently selling its packaged ice plants to west coast dairies and other quantity users of ice.

It also operates a leasing arrangement, under which it guarantees a fixed cost of ice and insures the customer against loss through power failures.

Daubert Has Rubber Base Adhesive

KEY NO. F-8412

CHICAGO—A new rubber base adhesive, DC 5020, developed by Daubert Chemical Co. for air conditioning equipment manufacturers, was announced recently.

DC 5020 is recommended by the firm for use in cementing glass, wool, or other insulating materials to cabinets. According to the manufacturer, this new product provides better adhesion and has superior handling qualities.

"My Typhoon District Manager helps me iron out tough technical problems in jig time," says Robert Brennan (left), Typhoon's Rochester dealer.



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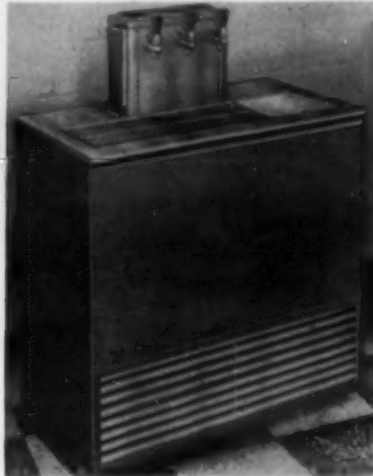
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'All-In-One' Drink Dispenser Produced



KEY NO. F-8413

PHILADELPHIA—A new self-contained "All-In-One" drink dispensing unit with carbonator, compressor, and syrup tanks in one plug-in unit was offered recently by Fischman Co. here.

This self-mixing drink dispenser

is fully insulated and refrigerated and delivers three flavors from 3-gal. pressurized syrup tanks in the chill compartment. It has extra syrup cold storage for five 1-gal. jugs.

Features include a self-contained hermetic compressor, an improved "Spark-L-Mix" carbonator, three automatic mixing arms, and a stainless steel interior with brass overflow and cleanout drains.

Market Graphite Container, Gun

KEY NO. F-8414

CLEVELAND—A new graphite container and gun that dispenses graphite with a squeeze of the fingers was recently marketed here by Servwell Products Co.

Small enough to hold in the hand, the gun sprays dry lubricant at its target while held in any position, the firm claims. A rubber bulb is attached to the container to provide a fine spray.

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Fidelity Bonds Can Protect Your Business

Individual, Schedule Form, Position Schedule, Primary Commercial, Blanket Position Bonds Prevent Fidelity Loss from 'Wrecking' Firm

CHICAGO—"In the bonding business, we know that most people are honest . . . I know, however, that a fidelity loss can wreck a business."

So stated Charles J. West of the Bond Dept. of W. A. Alexander & Co., Chicago, in discussing fidelity and surety bonds at a heating and air conditioning dealer management school held earlier this year on the Northwestern university campus here.

Bonding Misunderstood

"The subject of suretyship, or bonding," West told the dealers, "is probably one of the most misunderstood subjects in the broad and complex field of insurance. . . . It is really one of the simplest activities."

"I suppose that the reason for this mystery which seems to surround the bond business is that people—both in and out of the insurance industry—try to think about suretyship in terms of insurance."

"Now it is true that insurance companies are in the bonding business, but this should not mislead us into thinking that the two lines of activity are the same thing. There are several important differences."

Bond Is Credit Extension

"Broadly speaking, a bond is an extension of credit. The bonding company pledges a portion of its assets to guarantee someone else's obligation. When a bond is executed, it is pretty much the same sort of thing as if you were to act as co-signer of someone's note."

In explaining some of the differences between an insurance policy and a bond, West pointed out: "A bond is a three-party agreement. There is the person who gives the bond, the person who asks for the bond, and the surety."

He continued: "The most well known kind of bonding that we do, and the riskiest, is fidelity bonding. When someone says that he's been bonded, we usually think of an honesty guar-

antee. . . .

"The cost of employee dishonesty to American business enterprise is estimated at more than \$500,000,000 each year. This is a conservative estimate. All losses are not reported."

"I am sure that there is no one in this room who does not carry fire insurance on his business, his home, his car, and his furniture. And yet, it is true that fire and dishonesty are the two major causes of loss to American business enterprise. If I were to ask how many of you have your employees bonded, however, I am afraid the percentage would be very slight. . . .

Fidelity Loss Can Wreck Business

"In the bonding business, we know that most people are honest. . . . I know, however, that a fidelity loss can wreck a business. It has happened time and time again. . . .

"I would simply like to draw your attention to the hazard you face, and tell you what we have to help you guard against that old human urge to get something for nothing. . . .

3 Bond Categories

"Fidelity bonds fall into three categories: First, the individual bond. In this case, you have decided that there is really only one position where you are vulnerable. . . . So you decide to bond the person in that job."

"The individual fidelity bond begins with an application which the employee fills out and which tells the bonding company something about the person whose honesty we are to guarantee. . . .

"Within two months after receiving the application, we have a pretty good idea about the individual's record and whether or not he is a desirable risk for employment."

"If the bond never afforded you a nickel's worth of protection, the investigation itself would be worth the premium to you. Remember that the bond is in effect the whole time we are investigating."

West pointed out that the kind of coverage provided by the individual fidelity bond is designed for the company with only one or two employees.

The bond is issued for a stated

amount, but may not be amended to cover any but the one named employee, he said. In most cases \$2,000 worth of this protection costs only \$10, and that includes the investigation."

"If there are several bondable employees," he went on, "it might be wise to purchase a schedule form of bond. Actually, the schedule form is pretty much the same as the individual bond, except that you may list several employees on the bond and you may amend it when an employee leaves or another is added."

"A variation on this form is the position schedule bond. This form allows you to list the position you want covered and so if the present occupant leaves and the replacement comes in, you do not have to make a change to keep the coverage in force. You will probably want, however, to have the new employee complete a bond application since this investigatory service is included in the price."

"The schedule has the advantage of being a more flexible kind of protection than the individual bonds, and has the added advantage of allowing you to schedule various amount of insurance without having to buy separate bonds."

"The present underwriting view, however, is that while there is a definite place for both the name schedule and the position schedule bonds, they become old-fashioned and unwieldy if the employer has need for any volume of fidelity insurance at all, and if the employer has any frequency of personnel turnover."

Blanket Bonds Developed

"It hasn't been too many years ago that bonding companies developed the blanket bond. We have found that we can provide fidelity protection, in most cases more cheaply, by agreeing with the employer to cover all of his employees under one bond without the necessity of naming the employees or jobs."

"This means that the employer has the protection he wants without having to worry whether or not he has kept track of the changes in his bond brought about by turnover."

"The two blanket forms have the added advantage for you of providing coverage on any new employees you may add while the bond is in force, even though

we did not charge a premium for them or even know that you hired them. . . .

"There are two kinds of blanket bonds: The primary commercial blanket bond and the blanket position bond."

"The primary commercial bond is written, beginning at \$10,000 in multiples of \$2,500 until you reach \$25,000 and then in multiples of \$5,000. There is no limit to the amount of insurance you may buy under this bond."

\$100,000 Maximum on Blanket Position Bond

"The blanket position begins at \$2,500 and continues in multiples of \$2,500 until you reach \$25,000. From \$25,000 to \$100,000 the bond is written in multiples of \$5,000. \$100,000 is the most you may buy."

"The difference most people notice first between the two bonds is that the blanket position is more expensive."

"The blanket position provides coverage in whatever amount you may wish to buy on each employee while the primary commercial form provides coverage on a per loss basis. . . .

"Both forms fill a definite need. The primary commercial form is indicated where you have a situation where the really dangerous hazard is posed by one or two positions, and the blanket position is indicated where you may have a wider spread of strong loss potential."

In his discussion of surety bonds, West covered license and permit bonds, miscellaneous

bonds, and bid and performance bonds. Regarding the latter:

"A bid bond is filed with a proposal you may make in an attempt to secure a certain job. It . . . simply guarantees that you will, if you are the successful bidder, accept the contract to be awarded to you at the price you have bid and that you will furnish a performance bond in support of the contract. . . .

"In a performance bond situation . . . we are particularly interested in the contractor's financial condition. Does he have enough money to pay his bills and meet his payroll until he receives payment from the job he is undertaking? Does he have so much other work on hand that he should not attempt to undertake this particular job?"

"On many occasions, a bonding company has discouraged a contractor from undertaking additional work only to be thanked later by the contractor when he comes to realize that he was given good advice, even though it meant passing up what may have looked like a profitable job at the time."

"We want to know about your equipment and whether or not it is adequate for the job. And we need to know what the contract contains, so we know what we are bonding. The bond itself simply refers to the contract and says that the contractor will perform it in accordance."

"In your particular line of business, all bonding companies want to watch for a maintenance guarantee of an excessive length of time."

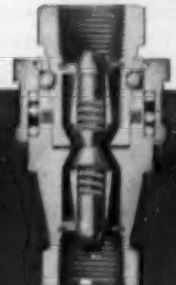
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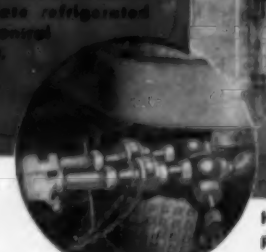
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Servicing Weathertron Heat Pumps (8)

Originally just a theory and for many years subject only to occasional experimental installations, the heat pump of late has developed into a practical and expanding business.

It's future was never brighter.

Design, manufacturing, sale, installation, and service of the heat pump have already become important factors in the air conditioning industry, and are bound to grow.

In recognition of the present stage of development, and the expected future, the NEWS is presenting herewith a series of articles on servicing a specific make of heat pump—the General Electric air-to-air "Weathertron."

This instalment discusses Defrost Components.

Defrost Components

Defrost Sensing Switch

The defrost sensing switch (SP) is attached to the top of the control panel (Fig. 11). At a predetermined static pressure difference across the outdoor coil, the defrost sensing switch contacts close. These contacts are actuated by a diaphragm which responds to the static pressure difference across coil.

Important: Be sure to check air flow for conformance to rated before adjusting.

These switches are factory set and, if air flow is within ratings, will work properly as they come from the factory. If it is desired to check the factory setting, use this procedure:

Table 1

Factory Setting	WT44C	0.55 in. water
(static pressure)	WT66C	0.70 in. water

A. Remove power from unit.

B. Disconnect both hoses from defrost sensing switch. Caution: Mark for correct replacement.

C. Place a battery test lamp or an ohmmeter on the wires from the defrost termination switch where they are attached to the gust switch.

D. Connect draft gauge hose to high side of defrost sensing switch (Fig. 12). Attach zero side of draft gauge to this tube. Leave low side of switch and draft gauge open to atmosphere. Tee'd into high side of draft gauge, connect small bottle and rubber tube formed into a "U" as shown in Fig. 12. Partially fill rubber "U" tube with water and raise or lower as needed to impose pressure on switch and draft gauge.

Turn adjustment screw very slowly on defrost switch so that contact closes when the draft gauge reading coincides



FIG. 11—Upper "pie-plate" section is Weathertron defrost sensing switch. Directly below is time delay switch which prevents wind gusts from causing unit to go into false defrost.

with the value of the switch setting obtained from Table 1. (Adjusting screw changes setting .021 in. H₂O for every revolution. Loosening screw decreases pressure.)

Test lamp will go on when contacts close. Check this setting by lowering tube to reopen switch contacts and then raising tube to close contacts. Repeat.

Caution: Extreme care must be taken to increase pressures very very slowly so that there is no lag between the pressure as read on the draft gauge and the pressure actually existing in the chamber of the pressure switch. Care must be taken that none of the rubber tubes kink.

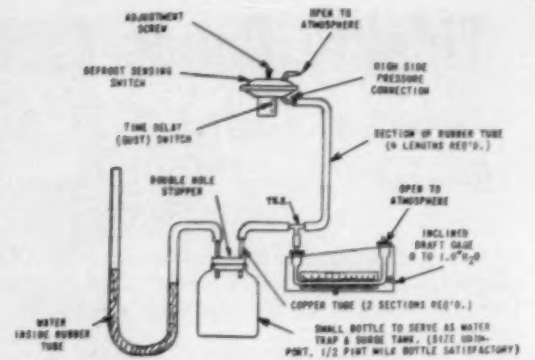
E. Disconnect all test fixture fittings and replace pressure tap tubes to switch.

Important: Do not use this setting as an indication of air flow. Air flow can only be checked accurately by reading watts on fan motor.

Time Delay (Gust) Switch

The time delay switch (TD) furnishes a time delay in the

FIG. 12—This setup can be used to test defrost sensing switch. High side pressure connection has its hose running to the air intake side of the outdoor coil when installed in the Weathertron.



defrost circuit in order to prevent wind gusts from causing the unit to go into a false defrost. It is located in a small enclosure on the top of the control panel below the switch.

The switch consists of a pair of contacts mounted on a piece of bimetal around which a heater coil is wrapped. The heater coil is a 24-volt coil. The heater is controlled by the defrost switch, while the contacts actuate the defrost cycle. This switch is factory set for 20 ± 10 seconds. The exact setting is relatively unimportant as the function remains the same.

If it is necessary to adjust this switch, turn the adjustment screw clockwise to decrease the time; counter-clockwise to increase. One-fourth turn in either direction will represent quite a large change in time.

Defrost Termination Switch

The defrost termination switch (PS) is located in the upper right hand corner of the outdoor air compartment just be-

low the three temperature switches. This switch is nothing more than a standard high pressure cut-out switch with the pressure connection in the outdoor gas line.

When the defrost cycle first starts, the head pressure is very low; as the ice melts, the head pressure (pressure in the outdoor gas line) rises to approximately 155 p.s.i. where all of the ice has been melted. The defrost termination switch contacts (normally closed) then open, ending the defrost cycle. (To Be Continued)

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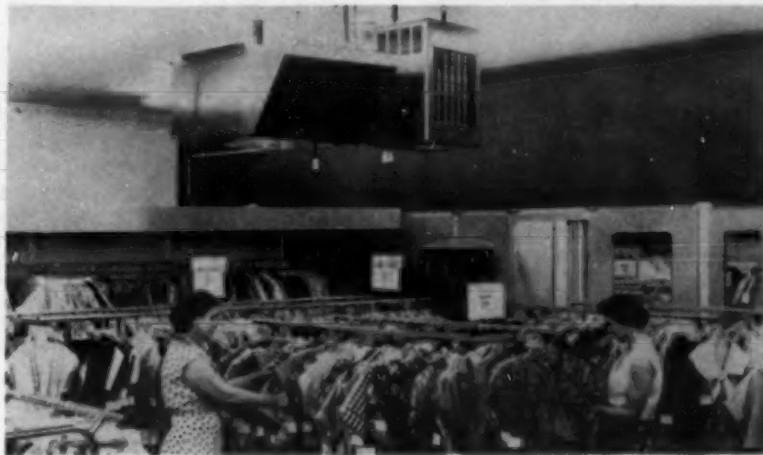
Alton, Ill. Store Installations Show Trend In New Packaged Unit Applications



LARGE overhang in front of P. N. Hirsch & Co. and all other shops in the Alton, Ill. shopping center not only provides a covered walk for customers but serves as a sunshade to deflect sun rays from the large glassed areas so the air conditioning units can perform more efficiently.



EQUIPPED with five Worthington packaged air conditioners and a 5-ton "Flexi-Cool" model is Young's Department store. Conditioned air discharges into both store and office area. The five packaged units, recessed into wall areas, consist of two 10-ton units, two 5-ton, and one 7½-ton model.



THESE TWO Hirsch customers are shopping where it is said "the weather and savings are fine." Three horizontal ceiling mounted Worthington "Flexi-Cool" air conditioning units completely cool the interior of this 100 by 70-ft. store. M. J. Hirsch, proprietor, selected the ceiling units because they provided more floor space for merchandise.



ONE of the three Worthington air-cooled condensing units atop the roof of Hirsch's store is shown here. Units are connected to cooling coils by refrigerant piping. This arrangement is said to reduce ceiling-hung weight to approximately 275 lbs.

Year-Round Units To Condition 600 Rooms In Chicago Hotel

CHICAGO — The Bismarck Hotel Co. announced recently that year-round air conditioning units will be installed in all of the hotel's 600 rooms under a \$1,000,000 modernization program.

Hotel officials claimed installation of the year-round units would make the Bismarck the first Chicago hotel to be totally air conditioned on a 365-day basis.

The air conditioning project is expected to be completed by April 1 next year, according to Arthur M. Wirtz, Bismarck Hotel Co. president, and Otto K. Eitel, managing director. Then, modernization and redecorating will be undertaken where necessary, the officials stated.

They said both winter and

summer air conditioning will be thermostatically controlled, with each guest regulating the temperature through individual dials in each room.

Installation of the air conditioning system is already under way. The initial heating phase is expected to be finished by Oct. 1.

All of the Bismarck's dining rooms, bars, ballrooms, and lobbies and about 20% of the guest rooms already are air conditioned.

Other Chicago hotels that have air conditioning programs completed or under way are the Palmer House, Morrison, Sheraton-Blackstone, Edgewater Beach, Drake, LaSalle, and Conrad Hilton, it was further reported.

WANTED: AIR CONDITIONING DISTRICT MANAGERS

Typhoon Air Conditioning Co., Division of Hupp Corporation, has openings for air conditioning sales engineers who have had retail or wholesale experience in selling 2 to 40 ton commercial and residential air conditioning. Attractive base salary plus commission arrangement. This is a real opportunity for any man who wants to increase his earning power with the fastest growing company in the air conditioning field—now engaged in an expanding cooling and heating program. Write, phone or wire MARK MOONEY, VICE PRESIDENT, TYPHOON AIR CONDITIONING CO., 505 Carroll Street, Brooklyn 15, N. Y.

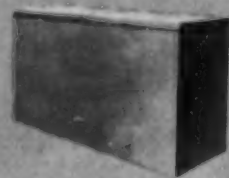
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Ice-Cels are applicable for churches, offices, stores, theaters, auditoriums, cafeterias and mortuaries... Write for "Ice-Cels in Action"—a pictorial brochure—or Engineering Catalog BAE.

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By Paul Reed

For Service and Installation Engineers



Low Evaporator Temperature (2)

(Continued)
DISCHARGE
TEMPERATURES

The July 2 instalment of the series showed a table of comparison of discharge temperatures of 12 and 22 for several evaporator and condensing temperatures. These discharge temperatures were taken from of -40°, 0°, and 40°, representing large size 14 1/4 in. by 22 1/2 in. Mollier diagrams for 12 and 22 supplied by Kinetic Chemicals,

so the discharge temperatures shown in the table are accurate within normal error in taking the values from a chart of this size, or accurate to 2° or less.

In compiling this table and using the Mollier diagrams, certain assumptions were made:

1. Constant entropy of the gas during compression. In practice, this is not quite true, but should be acceptable for comparison purposes.

2. Evaporating temperatures of -40°, 0°, and 40°, representing common types of equipment in various types of equipment.

3. Condensing temperatures of 90°, 110°, and 140°, representative of condensing temperatures commonly found under various conditions.

4. Discharge temperatures above 275° were regarded as excessive. Admittedly, this was somewhat arbitrary, although it is the author's understanding that 275° F. was the maximum discharge temperature used by ASRE task committee on 23R and 14-41 Standards.

One reason that they chose 275° was that one of the major refiners of refrigeration oil stated that the oil begins to deteriorate if a temperature of 275° F. is exceeded.

Else and Flowers found that refrigerant decomposition was quite marked at 347° F. (175° C.), as evidenced by formation of a residue on the compressor discharge valve and valve port. Formvar and Formex insulation on the wire in hermetic motors is said to start to soften at about 320° F. (160° C.).

On the other hand, a manufacturer of low temperature food storage equipment reports that they measured temperatures as high as 425° by means of a thermocouple near the discharge valve port in a compressor valve plate, without noticeable darkening of the oil.

So the reader can judge for himself. Perhaps air in the system or moisture in the refrigerant makes a great deal of difference in the maximum allowable discharge temperature. Perhaps the characteristics of the oil used may have a potent effect.

At any rate, whether too high or too low, 275° F. was used in Table 11 in the article as the maximum allowable discharge temperature, and it seems to be an acceptable limit until a more accurate one possibly is established.

5. The suction gas was assumed to enter the compressor at 65° F., regardless of its evaporating temperature. For 40° evaporating, this means 25° of superheat; but for -40° evaporating it means 105° of superheat.

Reason for the selection of 65° as the temperature of the suction gas at the compressor inlet was that for many years 65° has been the commonly used value, for it is above the normal dewpoint of the room air. A temperature much below 65° would result in frequent sweating of any uninsulated suction lines.

A manufacturer of low temperature food store equipment, has objected to our statement that 22 is not advisable for air-cooled units in a 70° room, if the evaporator temperature is below -16°, stating that it has been using 22 in open self-service cases whose evaporators are carried as low as -35° F., equipped with air-cooled condensing units, and that very little trouble showed up. The author has no doubt but that their statement is quite true.

SUCTION SUPERHEAT HAS STRONG EFFECT ON DISCHARGE TEMPERATURE

Our statement included the qualifying phrase "on this basis," that is, based on the five assumptions listed above. In all fairness, the author is quite willing to agree that perhaps some further explanation should have been made of these five

assumptions, particularly No. 5, for the Suction Superheat has a very potent effect on the discharge temperature.

It would not be good practice to allow 105° of superheat, not only from a standpoint of aggravating high discharge temperatures, but it would not make for good operating economy.

There is no point in allowing a superheat beyond 30° or 40°, which is ample to assure complete vaporization of all liquid in the suction line and prevent compressor slugging.

With -40° evaporating and 40° instead of 105° superheat, the suction temperature at the compressor inlet would be 0° instead of 65°. Under this condition, and at 90° condensing, the discharge temperature would be 166° for 12 and 220° for 22; at 110° condensing the discharge temperature would be 188° for 12 and 251° for 22.

For 140° condensing it would be 222° for 12, but we do not have data on 22 above 115° saturation, but the discharge temperature for 22 with 140° condensing would be above 275°.

For an air-cooled unit, we can normally assume a temperature difference between the condensing temperature and room temperature, of from 30° to 40°; so 90° condensing would correspond to a room temperature of from 50° to 60°; 110° condensing to a room temperature of from 70° to 80°; and a 140° condensing to a room temperature of 100° to 110°.

If we assume a 40° suction superheat, we can operate an air-cooled unit in a 70° to 80° room at an evaporator temperature as low as -57° for 22, rather than at -16° evaporating temperature superheated to 65°, and still stay under 275° discharge temperature.

This illustrates what a powerful effect suction superheating has on discharge temperature.

COLD SUCTION LINES REQUIRE INSULATION

Although we should run on comparatively low suction superheats on low temperature fixtures, this results in cold suction lines. Suction line temperatures much below 65° will often cause condensation of moisture from the room, and this we cannot have.

The answer is, of course, to insulate the suction line.

To prevent a discharge temperature of 275° or higher, with a condensing temperature of 90°, 12 suction gas from a -40° evaporator can superheat to 100°, although in the case of 22 the suction gas should arrive at the compressor not higher than 43°.

With 110° condensing and -40° evaporating, 22 suction gas should arrive at the compressor not higher than 19°, while 12 could superheat to 75° and the discharge temperature would still not be above 275°.

Thus, by insulating the suction line and freely feeding the expansion valve to maintain a fully active evaporator, discharge temperatures of under 275° can be maintained for either 12 or 22 even with air-cooled units. If necessary, the expansion valve can be over-fed in order to reduce the superheating in the suction line and the temperature of gas at the compressor inlet.

EFFECT OF CONDENSING TEMPERATURE ON DISCHARGE TEMPERATURE

In the two preceding paragraphs, a 40° temperature difference has been assumed between condensing temperature and room temperature. This is fairly common for air-cooled condensers, but if the condenser has a generous amount of surface, plenty of air is being passed through it, the condenser is kept clean and there is no recirculation of air through the condenser, temperature difference may be no more than 20°.

With 22, a reduction of 20° in condensing temperature will reduce the discharge temperature about 25°.

(To Be Continued)

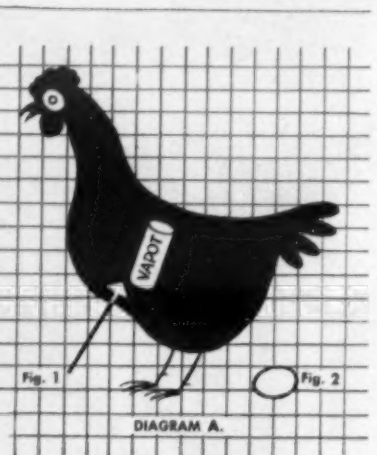


Diagram A, above, represents a device used in egg production. The technical word for it is **hen**.

Components are fed into a hopper, gulletted, conveyed to a processing room and thence to a packaging department. The end product (Fig. 2) is known as an **egg**.

How it got to be an egg doesn't interest egg buyers. Egg buyers just want eggs. Good eggs.

And users of refrigeration want refrigeration. Good refrigeration.

However, one of the working parts of most soundly engineered hens is something the name of which escapes us at the moment, but it corresponds to **VAPOT**. (Fig. 1.)

In a simple ice cream storage box or in the complex refrigerated hold of a ship, **VAPOT** is a small not-too-costly working part. It **defrosts**. Quickly and at the right time it dispels frost and ice without raising temperature detrimentally. There are alternate devices that defrost. We can quickly prove that **VAPOT** defrosts faster with less rise in temperature and that it reduces the cost of refrigeration.

If you build, sell, buy, design or install refrigeration you will be astounded when **VAPOT** is explained to you and/or your engineers. Architects should find out about it too.

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Government Contracts

SYNOPSIS OF PROPOSED PROCUREMENT

ARMY

Auburn General Depot, U. S. Army, Auburn, Wash.
Following items are procured under IFB QM 57-12—Bid Opening 31 Aug. 56.
CASE, DISPLAY, REFRIG., Open, cold, self-service, three deck with 1½-hp. Air-Cooled Condensing Unit, 3 ea.—CASE, MEAT DISPLAY, REFRIG., Self-service with two sets trays with 1½-hp. Air-Cooled Condensing Unit, 1 ea.—CASE, PRODUCE DISPLAY, REFRIG., self-service with 1-hp. Air-cooled condensing unit, 1 ea.—CASE, FROZEN FOOD DISPLAY, REFRIG., self-service, single with 1 hp., 1 ea.—Bid Sets available until 20 Aug. 56, unless exhausted.

Auburn General Depot, Auburn, Wash.
The following items are procured under IFB QM 45-149-57-12—Bid Opening 14 Sept. 56.

CASE, DISPLAY, REFRIGERATED, open cold, self-service, three (3) deck, with ends, single units, minimum length 12 ft.; minimum ht. 56 in.; minimum depth 42½ in.; for use in floor space approximately 48 sq. ft.; complete with 1½-hp. air-cooled condensing unit, for "F-12" refrigerant charge; Hussmann Model D-12; Warren Model XD-12; or equal, 3 ea.—CASE, MEAT DISPLAY, REFRIGERATED, open, cold, self-service, with superstructure, with two (2) sets of trays, 2 sections, minimum 10 ft. 9 in. each section, each section joined, with two (2) ends; minimum height 54 in.; minimum depth 41½ in.; complete with 1½-hp. air-cooled condensing unit for each section, for "F-12" refrigerant charge; Hussmann Model O-11Y56; Tyler Model M12A1; or equal, 1 ea.—CASE, DISPLAY, REFRIGERATED, produce, self-service, single unit, with ends; with superstructure; minimum length 10 ft. 9 in.; minimum height 72 in.; minimum depth 42½ in.; complete with 1-hp. air-cooled condensing unit, for "F-12" refrigerant charge; Hussmann Model V11; Warren Model OVS 11; McCray Model PFD 11; Knock Model 4310; or equal, 1 ea.—CASE, REFRIGERATED, frozen food display, self-service, with superstructure; units, minimum of 12 ft. in length, to be joined for minimum total of 48 ft.; with two (2) ends comprising of minimum of 6½ in. for a total minimum over-all length of 48 ft. 6½ in.; minimum height 56 in.; minimum depth 41 in.; complete with 1-hp. air-cooled condensing unit for each unit, for "F-12" refrigerant charge; Hussmann Model LF-12N56; or equal 1 ea.

Purchasing & Contracting Office, Columbus General Depot, Columbus, Ohio.
CHILLED WATER UNITS, Mil. Spec. MIL-C-10933A, 3 line items—3 ea.—IFB 57-S1B—Bid Opening 10 Sept. 56.

Kansas City District Corps of Engineers, U. S. Army, 1800 Federal Office Building, 911 Walnut, Kansas City, Mo.
CONSTRUCTION OF ACADEMIC BUILDING, Ft. Leavenworth (Leavenworth County), Kans. Work consists of const. of three story building with an approx. floor area of 300,000 sq. ft. including air conditioning system and heating plant. Also includes site grading, outside utilities, roads, parking areas, and sidewalks—Job—IFB 57-16—Bid Opening 5 Oct. 56.

NAVY

Navy Purchasing Office, 4th & Independence Ave., Washington, D. C. Attn.: SPT-1A.

CENTRIFUGAL FAN, cap. 20 c.f.m. at A 0.6 in. W.G. Static Pressure, Fan casing to be airtight of sheet metal or a casting. Fan motor to conform to Federal Spec. CC-M-636A dated 29 Oct. 51 and Amend. 2 dated 27 Jan. 55. Motor to be of commercial design, continuous duty 110 V. 60 cycle single phase a.c.—2,784 ea.—IFB 600-25-57-S—Bid Opening 10 Sept. 56.

AIR FORCE

Base Procurement Office, Eglin Air Force Base, Fla.
The following items are procured under IFB 08-603-57-52B—Bid Opening 6 Sept. 56.

UNIT COOLER, 4 tons cap., 1 ea.—COMPRESSOR, unit assembly, Carrier Model 5H-40 or equal, 1 ea.—AIR CONDITIONER, 7½ ton self-contained unit, 1 ea.—AIR CONDITIONER, 3-ton self-contained unit, 2 ea.—AIR CONDITIONER, Floor Type, 30,000 B.T.U., rated cap., 1 ea.—COMPRESSOR, unit assembly, for "Freon-12," compressor to be direct drive, V-type 4 cyl. with capacity control, 2 ea.—COMPRESSOR, unit assembly, for "Freon-12," compressor to be direct drive, V-type 4 cyl. with capacity control, 2 ea.—CONDENSER, EVAPORATIVE 100-ton cap. Trane No. 50-100 or equal, 1 ea.—EVAPORATIVE CONDENSER, Carrier Model No. 9E5 or equal, 1 ea.—AIR CONDITIONER, evaporative, condenser type, for "Freon-12" Ref. 14.2 tons refrigeration cap., 1 ea.—EVAPORATIVE CONDENSER, Carrier Model No. 9E6 or equal, 1 ea.—AIR CONDITIONER, 3 ton self-contained, Carrier Model 50 K40 or equal, 2 ea.—UNIT COOLER, 4 tons capacity, Carrier Domestic Model 15AB5-159 or equal, 1 ea.—RECEIVER FOR "FREON-12" complete with valves, 1 ea.

Base Procurement Office, Eglin Air Force Base, Fla.
INSTALLATION OF AIR CONDITIONING SYSTEMS in Bldgs. 9221 and 9240 at Santa Rosa Island Bldg. 943 at Eglin Air Force Base, Fla.—Job—IFB 08-603-57-62B—Bid Opening 18 Sept. 56.

GENERAL SERVICES ADMINISTRATION

Business Service Center, General Services Administration, 620 Post Office & Courthouse, Boston 9, Mass.
PARTIAL INTERIM AIR CONDITIONING for Court Room, Brattleboro, Vermont, Post Office and Courthouse—Job—IFB BOS-57-23—Bid Opening 9-4-56.

Vendo-Vendorlator Merger Proposal--

(Concluded from Page 1, Col. 2)

is currently introducing machines which vend hot soups and both hot and chilled "main dish" foods.

Vendorlator manufactures venders for all soft drink bottlers, manufactures central system air conditioning equipment, tracts for aircraft parts, it was explained.

E. F. Pierson, chairman of the board of Vendo, said that the transaction will result in no change in the operating or sales policies of the two companies.

"The action will provide additional facilities and personnel needed for the rapidly expanding product lines of both companies," Pierson explained. "It will also permit more effective research activities through the combination of facilities and elimination of duplicating efforts."

The transaction will be effected by an exchange of shares of common stock. After the affiliation, present Vendo shareholders will have majority control of the two companies, it was added.

The Vendo Co. was founded in 1937 by E. F. and John T.

Pierson, brothers. Vendo started business with 7 employees, a patent on a then revolutionary bottled soft drink vender, and occupied a few square feet of leased space. Today its owned plant comprises over 400,000 sq. ft., covers 32 acres and employs more than 1,200 persons. An affiliated plant is located in Mexico.

Vendo earnings for the first six months of 1956 were \$936,258 or \$1.14 per common share after preferred dividends, as compared with earnings for the entire year 1955 of \$842,379, or \$1.01 per share. Net sales for 1955 were \$20,799,450. Net sales in 1956 are currently 10% greater than sales for the comparable period of 1955, the report continued.

The Vendorlator Mfg. Co. was founded in 1938. It occupies 250,000 sq. ft. of leased plant in Fresno, Cal., employing 1,200 persons. Its common stock is traded over the counter. Vendorlator's net sales for the fiscal year ending June 30, 1956, were \$14,752,722 and earnings were \$510,080, it was further pointed out.

ASHAE Meeting and Show Plans--

(Concluded from Page 1, Col. 4)
management of the International Exposition Co., New York City.

General chairman of the Illinois Chapter Committee on Arrangements is Peter J. Marschall, assisted by vice chairman Harry G. Gragg, Illinois Chapter president.

The annual meeting will consist of technical sessions, committee meetings, and election and installation of officers. A program of 14 papers and two symposiums has been arranged by the Programs and Papers Committee, Walter A. Grant, Syracuse, N. Y., chairman.

Plan Symposiums on Dehumidification, Industrial Ventilation

A symposium on industrial ventilation is being arranged by Prof. Charles H. Pesterfield, E. Lansing, Mich. John Everetts, Jr., Philadelphia, is making plans for a symposium on dehumidification.

In addition to the reports of the officers and committees, there will be papers presented on a variety of subjects. Several are ASHAE Research Laboratory papers and others are the result of studies at cooperating institutions.

There will be a preliminary report on pulsations in oil-fired and gas-fired heating equipment now being conducted at Battelle Memorial Institute under the joint sponsorship of ASHAE, AGA, and OHI.

Paper on Design of Underground Coils

Another paper is the result of a study of the design of the underground coil when earth is the heat source or sink for a heat pump.

One of the papers included in the program is the second part of a study conducted at the University of Illinois on the effects of floor coverings on floor panel heating.

Report on Tests On Cooling Towers

Those with an interest in cooling towers will want to hear the results of several hundred tests over a period of more than a year on three types of redwood cooling tower packings, it was pointed out.

An ASHAE Research Laboratory paper on panel heating as well as a design manual for floor panel heating will be discussed. This is the result of activity since November, 1951 by the TAC on Panel Heating and Cooling and the ASHAE Research Laboratory to develop basic information pertaining to panel heating and cooling applications.

Using an Analogue Computer

How an analogue computer can be used to solve thermal circuits, and a table of outside design temperatures throughout the United States will be topics covered in two other papers, it was disclosed.

The Illinois Chapter Committee on Arrangements is divided into three divisions headed respectively by G. Gill Freyder, ticket reservations; Herbert Kriesman, hospitality, both of

Chicago; Joseph S. Kearney, entertainment, Evanston, Ill.

The chairmen of the various committees, all of Chicago, are Marion W. Bishop, reception; Edmund P. Heckel, Jr., finance; Mrs. Harry G. Gragg, ladies; Robert W. Roose, publicity; George V. Zintel, banquet; Lawrence O. Paul, sessions; Harold C. Stevens, transportation; William J. Abraham, radio and TV shows; Robert J. Salinger, registration; John C. Scott, inspection trips; Edward R. Teske, information; and Henry J. Couch, facilities.

Convention Telecasts Boost Westinghouse Sales by 50%

MANSFIELD, Ohio—Apparently the Westinghouse sponsorship of the radio and television coverage of the political conventions is paying off.

Major appliance sales to dealers during the week of the Democratic convention jumped 50% over the same week of 1955, according to John J. Anderson, manager of the major appliance division.

The increase over the preceding week when dealers were stocking up getting ready for the convention was 15%, indicating, he said, dealer volume during the Democratic convention was considerably greater than many retailers had anticipated.



F. J. NUNLIST



H. P. MUELLER, JR.

Mueller Climatrol--

(Concluded from Page 1, Col. 3)

He was appointed general sales manager in 1952 and sales vice president in 1954.

Nunlist is a trustee of the National Warm Air, Heating and Air Conditioning Association and a past president of the Wisconsin chapter of the American Society of Heating and Air Conditioning Engineers.

Nunlist is a director of the Appliance Manufacturing Association and is chairman of the organization's Gas Boiler Div.

H. P. Mueller, Jr., represents the fourth generation of Muellers to actively participate in company management. He has been actively employed by the company since 1948 when he joined the engineering department as an application engineer. Later he joined the sales department and became assistant sales manager in 1952. He was appointed a vice president in 1954.

Firm Incorporated

TOPEKA, Kan.—McElroy Refrigeration & Heating Co., is a newly incorporated firm here. Located at 2611 W. 17th St., Homer I. McElroy and Don F. Gresser are incorporators of the firm.

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AIR CONDITIONING & REFRIGERATION NEWS

REPRINTS

The following articles have appeared recently in Air Conditioning & Refrigeration News, and are now available in reprint form. Supply of some reprints is limited. The order coupon below can also be used to obtain "selected" reprints not listed by giving title, page, and issue date.

BOOKLET FORM

A) "AIR CONDITIONING THE HOME"

A comprehensive study on year 'round residential air conditioning—seven sections including, why people buy it, market conditions, how to sell it, estimating costs for various types of installation, FHA requirements, plus much more valuable information. 9" x 12" in size, finely printed and profusely illustrated.

Only \$1.00 each.

B) "COMMERCIAL PACKAGED AIR CONDITIONERS AT WORK"

70 pages, 9" x 12"—the first comprehensive book covering this important segment of the air conditioning industry. Includes market, survey information, commercial, institutional and industrial applications, and a complete explanation of the fast growing segment of the commercial market—packaged heat pumps.

Only \$1.00 each.

C) "SHORT, SHORT" COURSE IN AIR CONDITIONING FUNDAMENTALS"

A brand new booklet just off the press dealing with air conditioning in basic, understandable terms. Five sections, including Air, Moisture; How to distribute air; Trouble-shooting air; Ventilation, Filtration; Sound, Comfort.

Only 25¢ each.

D) "PRODUCT KNOWLEDGE, PROTECTIVE MAINTENANCE, TROUBLE-SHOOTING, ADJUSTMENT, REPAIR OF ELECTRIC MOTORS"

A discussion by T. N. Schierloh, service technical manager of General Motors' Delco Products Div., on servicing refrigeration and air conditioning motors.

Only 40¢ each.

E) "COMPARISON OF REFRIGERANTS 12-22"

Paul Reed presents a complete digest and factual comparison of the two refrigerants 12 and 22. Twelve fact-filled pages to help prevent troubles that have been and are now being experienced in the field.

Only 75¢ each; 50 or more copies, 50¢ each.

Everyone concerned with air conditioning should read the above books and keep them handy for reference purposes. Order your copies now.

PAMPHLET FORM

- | | |
|---|---|
| 5) Water Shortage Cited as Aiding Trend to Air-Cooled Residential Air Conditioning | 18) Residential Air Conditioning in Wichita |
| 6) News Survey Shows Trends in Residential Air Conditioning | 19) Residential Air Conditioning in Wilmington, 1954 |
| 7) Psychological Study Shows Hidden Benefits of Home Conditioning | 20) Residential Air Conditioning in Atlanta, 1954 |
| 8) New Ceiling Diffusers Can Be Used in Residential Systems | 21) Residential Air Conditioning in '54 in Ft. Worth |
| 9) '55 Home Unit Sales Up 34% in N. Y. Area | 22) Residential Air Conditioning in Cincinnati, 1954 |
| 10) Chilled Water Central Air Conditioning Installed for \$1,000-\$1,400; Utilizes Wet Heating System, Needs No Duct | 23) Detroit Commercial Refrigeration Sales |
| 11) Detroit Air Conditioning Sales at New High | 24) New Wichita Survey Shows Residential Air Conditioning Soars |
| 12) Survey Shows Equipment in Food Stores | 25) Fort Worth Survey Reveals New High in Home Air Conditioning Installations |
| 13) Survey Points Up Replacement Market for Restaurant Refrigeration Equipment | 26) Memphis Residential Air Conditioning in 1955 |
| 14) New Minneapolis Survey Shows Home Installations 370% Higher Than '54 | 27) What's the Market for Systems 100 Tons and Up? |
| 15) Air Conditioning, Commercial Refrigeration Shipments 1949-1955 from Figures Collected by U. S. Bureau of the Census | 28) Detroit Air Conditioning Sales |
| 16) Minneapolis Residential Air Conditioning in 1954 | 29) Atlanta Residential Air Conditioning in 1955 |
| 17) Memphis Residential Air Conditioning, 1954 | 30) Balancing Air Distribution for Year-Round Conditioning |
| | 31) Heat Pump Prospects |
| | 32) Air Conditioning Conference Spotlights the Air-Cooled Condenser |
| | 33) Trends in Home Air Conditioning 1956-1965 |
| | 34) Tips on Blower Installations |

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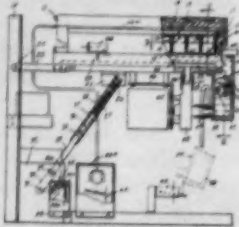
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PATENTS

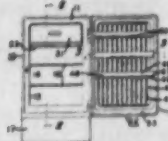
Week of April 3
(Continued)

2,740,265. MACHINE FOR MANUFACTURING ICE CUBES. John R. Bayston, Van Nuys, Calif., assignor to John R. Bayston, trustee, Icecrafter (Liquidating) Trust, Van Nuys, Calif. Application May 3, 1954, Serial No. 427,952. 5 Claims. (Cl. 62-7.)



1. In a machine for manufacturing ice, an evaporator unit including a plurality of open bottom ice forming cells, means for introducing a liquid to be frozen into said cells to be subjected to alternate freezing and defrosting cycles, a platen movable to evaporator closing position during an ice freezing cycle and to an open ice discharge position during a defrosting cycle, wherein ice is formed in said cells and upon said platen during the freezing cycle and freed from said cells during the defrosting cycle, a cam shaft mounted on said machine above said platen, a cam on said shaft engageable with said platen, and power means operable following the said freezing cycle to actuate said cam shaft and cam to depress said platen for forced separation from said evaporator and ice upon said cam being rotated to one position and permit said platen to close said evaporator when said cam is moved to another position.

2,740,266. REFRIGERATING APPARATUS HAVING SHELVES ON DOOR. Keith K. Kesling, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application March 19, 1953, Serial No. 343,322. 1 Claim. (Cl. 62-39.)



In combination, a refrigerator cabinet having a food storage chamber therein provided with an access opening, a door pivotally mounted on said cabinet for swinging movement relative thereto and normally closing said chamber access opening, means for cooling the interior of said chamber and causing circulation of air therein, said door including an outer pan-like panel and a one-piece molded plastic panel forming the inner face thereof exposed to the interior of said chamber, said one-piece inner panel being attached to said outer pan-like panel only at its peripheral edges, a portion of said one-piece inner panel inwardly of its peripheral edges being formed to provide a recess in the inner face of said door, a shelf secured to said door and extending across said recess in the inner face thereof, said shelf having an imperforate article supporting base, said inner one-piece molded plastic door panel being corrugated at least along the recess thereof in a direction transverse to the extension of said shelf, said corrugations serving to increase the structural strength of said one piece molded plastic inner door panel and preventing bowing thereof inwardly of its points of attachment to said outer door pan-like panel, and the rear edge of said shelf base abutting ridges of said corrugations and being spaced from furrows thereof to define a plurality of separate spaced apart passages between said shelf base and said inner door face for the flow of air circulating in said chamber around the back of said shelf to carry away warm air as it forms adjacent the inner face of said door at said recessed portion thereof.

2,740,268. HIGH SPEED AIR CONDITIONER CIRCULATING CHAMBER. Calvin M. Jones, Miami, Fla. Ap-

CHIEF REFRIGERATION ENGINEER

Unusual opportunity for a well grounded man who wants and can take responsibilities.

SALARY OPEN

Location New York City—Our organization knows of this ad. Write in confidence to Box 1000, Realservice Advt. Agency, 110 West 34 St., N.Y.C.

plication May 14, 1956, Serial No. 355,087. 5 Claims. (Cl. 62-140.)



2. An air conditioner comprising a coil, the axis of which is vertically dis-

posed, a frusto-conical shaped shell extending from the lower end of the coil, vertically disposed screen sections woven through the coil, a casing having an annular trough in the lower end spaced from and positioned around said coil, a blower positioned on the axis of the coil and mounted in an area around which the trough of the inner casing extends, an outer housing spaced from and positioned around

(Continued on next page)

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POSITIONS WANTED

JOURNEYMAN AIR conditioning and refrigeration—12 years service and installation experience. 34 years old. Want position with future preferably supervisory. Experience includes ammonia, large industrial air conditioning, super markets, etc. Will relocate for right opportunity. Address BOX A5616, Air Conditioning & Refrigeration News.

SALES POSITION with distributor or manufacturer in the Southwest or West Coast. Extensive national experience in refrigeration and air conditioning as sales executive. Will consider regional opportunity. Write BOX A5621, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

OPPORTUNITY FOR manufacturer's representative: To increase your earnings, sell a full line of freezers, beverage coolers, display cases, dual temperature reach-ins and walk-ins. We manufacture a quality line to meet competition. Territories now available. Write HOWARD REFRIGERATOR CO., INC., 4745 Worth Street, Philadelphia 24, Pa.

TOPFLIGHT AUTOMATIC washer and dryer serviceman. Must be fully experienced on all popular makes. Write, stating experience, age, salary expected, also if you have had experience in any other line of service. Well established firm in southwestern Ohio. Write BOX A5607, Air Conditioning & Refrigeration News.

WANTED TWO—Air conditioning service and installation men. Prefer men with heating experience, must be able to run duct systems and install units. Must be fully qualified or do not apply. Location, Lakeland, Florida. Population 50,000, Carrier air conditioning dealer. Living conditions ideal. BOX A5612, Air Conditioning & Refrigeration News.

AIR CONDITIONING and refrigeration equipment wholesaler has openings for several sales engineers. Car furnished and guaranteed salary plus incentive. Must be willing to move to Northern California. Please write BOX A5613, Air Conditioning & Refrigeration News, giving full details as to family, salary desired, educational background, experience and other pertinent information.

PLANT MANAGER—Man to manage medium size factory manufacturing heat exchange equipment in Southern California. Knowledge of sheet metal layout, die work and copper brazing required. Give age, education, experience and qualifications. State when available. Salary open. BOX A5615, Air Conditioning & Refrigeration News.

SERVICE MANAGER—Large commercial and air conditioning distributor located in large midwest city has position open for experienced man. Plenty of opportunity, including salary, bonus, and a share in the profits, if you qualify. Write, giving all qualifications and previous experience. BOX A5617, Air Conditioning & Refrigeration News.

APPLICATION and sales engineer—Air conditioning, heating and refrigeration to assist manufacturers' representative located Southeast. Contacting wholesalers, manufacturers, contractors and engineers. State past experience, references and salary expected. Write BOX A5618, Air Conditioning & Refrigeration News.

INSTRUCTOR — POSITION available for applicant who has had previous air conditioning service experience or experience as an air conditioning instructor. Duties will include organizing training programs, taking full charge of classroom and laboratory instruction to teach salesmen and dealers servicing of package air conditioning and water chillers. Send complete resume of experience and personal qualification to BOX A5619, Air Conditioning & Refrigeration News.

TIRED OF same old routine? Familiar with refrigeration systems? Interested in selling for established and reputable firm? Then contact BOX A5620, Air Conditioning & Refrigeration News immediately.

UNUSUAL OPPORTUNITY for a service manager for a Chicago refrigeration and air conditioning distributor and contractor. Position is permanent with steady advancement. Salary in keeping with ability. Send complete resume of experience to BOX A5622, Air Conditioning & Refrigeration News.

EASTERN REGIONAL service supervisor: Prominent midwestern manufacturer of large tonnage systems requires experienced service man to trouble shoot regional service problems. Minimum required experience 10 years. Preferred age between 35 and 45. Must headquarter in New York City. Salary open. Address replies, giving full details of work history c/o BOX A5623, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

BRAND NEW in original cartons 280 Tecumseh sealed refrigeration units, compressor motor 1/4 h.p., evaporator condenser, model numbers HL-199, HL-201, and HL-204. Will sell entire lot at a bargain price. AMCO MACHINERY CO., 125 Leib Street, Detroit 7, Michigan, Phone LO 7-1070.

SERVICEMEN'S THERMOMETERS: Mercury filled with pocket cases, range -60° to plus 160° F. Mfg. by Taylor and G. M. Price \$10.00 per dozen postpaid. H. L. ROGESS & SONS, Liberty, Missouri, P. O. Box 137.

NEW SELF contained Kesco automatic condensate water disposal pumps for air conditioners ice cube bins; at your local wholesaler; available in 10 and 20 foot heads.

NEW YORK, Abco Refrigeration, 1615 Second Ave.

JAMAICA, N. Y., Wholesale Distributors, 148-24 Liberty Ave.

MT. VERNON, Eastern Supply, 521 East Third Street

SYRACUSE, Gould-Farmer Co., 1020 W. Genesee Street.

WHITE PLAINS, County Seat, 111 Central Ave.

NEWARK, N. J., Tesco Distributors 78 Boston Street

DAYTON, OHIO, W. H. Kieffaber Co., Refrigeration Dept.

LOS ANGELES, CALIF., Air Cold Sales Co., 1337 So. Atlantic Blvd.

SACRAMENTO, CALIF., Associated Refrigeration, 1717 Eye Street

SEATTLE, WASH., Refrigerative Supply, 204 W. Republican

DETROIT 4, MICH., Lee Equipment Co., 4721 Joy Road

HIGHLAND PARK, MICH., J. M. Ober, Inc., 55 Oakman Blvd.

BRIDGEPORT, Conn., Parsons Bros., Inc., 2137 East Washington Ave.

Distributors write to KESCO PRODUCTS CORP., Springfield Gardens 13, N. Y. for sample pump and literature.

WATER COOLERS: Quality built bottle and pressure type. Full capacity. Lowest cost. Beautiful cabinets, well designed, sturdy. Complete five year guarantee on sealed refrigeration cycle. Proven in service over past twelve years. Write on your letterhead for literature and prices. REMCOR PRODUCTS COMPANY, 321 E. Grand Avenue, Chicago 11, Illinois.

6500 FEET 1/4 O.D.X. .035 wall SAE 1015 seamless steel tubing \$8.00 hundred feet. 27 1/2 sheets .051-16 Gauge 36 x 120 aluminum type 3S-1/4 H. \$48.90 cwt. 30 sheets 18 gauge black steel 53 x 107 \$8.50 cwt. Inquire about aluminum tubing and fan blades. BOX A5614, Air Conditioning & Refrigeration News.

MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR; 2833 Lincoln Avenue, Chicago 13, Illinois.

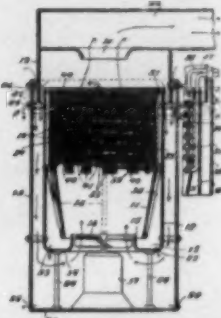
CONTRACT MANUFACTURER will build to your brand name. Twenty-five years experience manufacturing 2 to 15 ton air conditioners, water coolers, liquid chillers, low temperature units, refrigeration specialties and cabinets. Will adhere to schedules. Can design. Present your needs. Write BOX A5609, Air Conditioning & Refrigeration News.

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(Continued from preceding page)

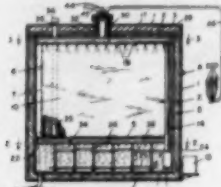
the inner casing, a skirt extended downwardly into the upper end of the housing and positioned between the housing and casing, and a duct having an opening therein extended from said skirt.

2,740,269. TANK CONSTRUCTION FOR COOLING LIQUIDS. Leon Bushler, Jr., Evanston, Ill., assignor to The Creamery Package Mfg. Co., Chicago, Ill., a corporation of Illinois. Application May 11, 1954, Serial No. 429,094. 6 Claims. (Cl. 62-141.)



1. A tank construction for storing and cooling liquids, comprising a reservoir of predetermined volumetric capacity, a cooling jacket subtending and being secured to a predetermined area of the underside of said reservoir to form an evaporator cavity therebetween, said jacket having an inlet port formed adjacent the lowermost portion thereof and an outlet port formed adjacent the uppermost portion thereof, both of said ports communicating with said evaporator cavity, a compressor, employing dichlorodifluoromethane as a refrigerant, having the suction side thereof communicating with said outlet port to effect circulation of said refrigerant through said evaporator cavity, a condenser communicating with the high pressure side of said compressor and said inlet port, and a capillary tube communicating with and disposed intermediate said condenser and said inlet port; said reservoir having between .75 and 1.25 square feet of the underside thereof subtended by said jacket and said evaporator cavity having an internal volume of .0075 to .0125 cubic feet for each cubic foot per minute of compressor piston displacement.

2,740,378. SPRAY COOLED MILK CONTAINER AND REFRIGERATING SYSTEM THEREFOR. George R. Duncan, Washington, Mo., assignor to Zero Mfg. Co., Washington, Mo., a company of Missouri. Application Sept. 26, 1952, Serial No. 311,772. 10 Claims. (Cl. 119-14.09.)

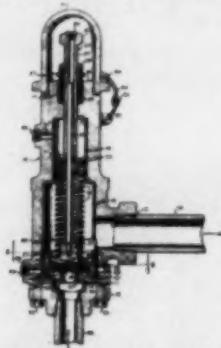


1. In a system for milking a farm animal and for cooling and storing the milk in a bulk receptacle as it comes from the animal, comprising milking means including teat cup means and first conduit means extending therefrom, a milk cooler having insulating walls, a bulk milk vacuum receptacle in said cooler, said bulk milk receptacle having a plurality of flat side walls, said receptacle also having top and bottom walls, said first conduit means extending into said bulk milk receptacle, said receptacle also having a second conduit means adapted to be connected to a source of vacuum whereby to apply said vacuum to said receptacle and to said teat cup means, certain of said receptacle walls extending substantially parallel with at least some of the walls of said milk cooler, means for cooling said receptacle during the milking operation including a refrigerating means and pipe means leading therefrom and having a portion located closely adjacent at least one of said walls of said receptacle, whereby to cool said receptacle by said portion of said pipe means to thereby continuously cool the milk by the circulation of a cooling medium in said pipe portion at least during the milking operation.

2,740,425. HIGH CAPACITY, GAS TIGHT SEATING, ADJUSTABLE SAFETY VALVE. Milton W. Garland, Waynesboro, Pa., assignor to Frick Co., Waynesboro, Pa., a corporation of Pennsylvania. Application June 20, 1951, Serial No. 232,638. 7 Claims. (Cl. 137-543.11.)

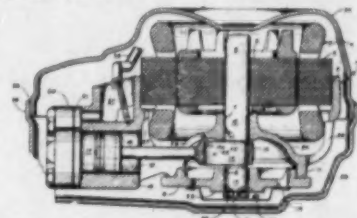
4. A safety valve comprising a hollow elongated valve housing having an end and a side opening for the passage of fluid, an elongated pin positioned axially within the housing, a guide member rigidly attached to an end of the pin within the housing and having substantially cylindrical walls engaging the bore of said housing, a

valve member, centering means mounting said valve member for universal limited rockable movement on the guide member and preventing lateral movement of said valve member, a seat member positioned transversely of the



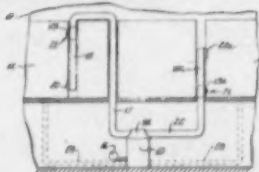
axis of the valve housing and having a raised apertured central portion providing a seat adapted to engage the valve member, guiding means mounted within the upper portion of the housing and slidably receiving the pin, the portions of the bore of the housing receiving the guiding means and the guide member having a common axis, and spring means abutting the guiding means at one end and the guide member at the other.

2,740,578. REFRIGERATION COMPRESSOR. Ralph L. Benson and Norbert A. Schersinger, Cincinnati, Ohio, assignors to Aveco Mfg. Corp., Cincinnati, Ohio.



1. In a refrigeration compressor, a main frame formed to define an upright central bore, a motor stator fitted within the bore, said frame beneath the bore being formed to define a bearing centrally positioned relative to the bore, a crankshaft rotatably supported by said bearing, a rotor secured to said crankshaft, said frame defining a cylinder bore vertically overlapping but laterally outside of said stator, a piston in the cylinder bore, and a connecting rod extending between said piston and said crankshaft.

2,740,587. THERMOSTATICALLY CONTROLLED AIR BLENDER. El Roy J. Kraft, Des Plaines, Ill., assignor to The Dole Valve Co., Chicago, Ill.

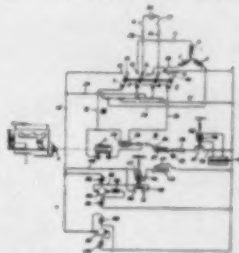


1. A temperature conditioning system comprising a heat exchanger having a plenum chamber to receive pressurized temperature conditioned fluid, a space to be temperature conditioned, a housing in said space having a pair of spaced apart apertures in one wall thereof communicating with the fluid in said space, a duct between said plenum chamber and said housing, said duct having an outlet extending into said housing adjacent one of said apertures and directed toward the other of said apertures, a shutter in said duct, means to rotate said shutter including an actuator extending through one wall of said duct, a casing having a first passage receiving said actuator and a second passage intersecting said first passage, said second passage also intersecting said one wall of said housing, a crank pivoted on said casing having one arm in said first passage connected to said actuator and a second arm in said second passage, a thermostat in said second passage engaging said second arm to control said actuator thermostatically, said casing having a third passage intersecting said duct on the upstream side of said shutter and intersecting said first passage, said first passage having an outlet opening into said housing in registry with said third passage, whereby the flow of fluid from said duct through said outlet will induce a flow of fluid from said first passage thereby to aspirate fluid from said space through said second passage past said thermostat, the discharge of fluid from said duct into said housing operating to induce a flow of fluid from said space through said one aperture into said housing whereupon said induced flow of fluid will be mixed and blended with said duct fluid prior to discharge thereof through said other aperture into said space.

2,740,904. CIRCUIT FOR VEHICLE REFRIGERATION. Wesley R. Goss, Fort Wayne, Ind., assignor to General Electric Co., a corporation of New York. Application May 4, 1954, Serial No. 427,454. 11 Claims. (Cl. 307-64.)

8. An electrical circuit for a refrigeration system for use in an engine-driven vehicle having a generator com-

prising alternating current generating means, said means including a field winding rotatably connected to the engine of said vehicle, rectifying means connected to said generating means for converting alternating current to direct current, voltage control means for regulating the voltage from said rectifying means, a battery connected

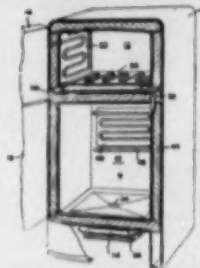


to have its output voltage additive to that from said rectifying means, said battery being connected to said generating means so as to excite the same, contact means serially connected to said battery, and means controlled by the vehicle generator to maintain said contacts open until said vehicle generator attains a predetermined voltage output, a motor adapted to operate refrigeration apparatus connected to said rectifying means and arranged to be operable by said direct current, a second motor adapted to operate a fan also connected to said rectifying means and arranged to be operable by said direct current, switching means arranged to disconnect said generating

means and said battery from said rectifying means, said switching means being further arranged to connect an external source of alternating current to said rectifying means thereby to operate said motors from said external source.

Week of April 10

2,741,095. REFRIGERATOR HAVING MULTIPLE SECTION EVAPORATOR. James W. Jacobs, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Oct. 7, 1952, Serial No. 313,453. 4 Claims. (Cl. 62-4.)



1. In a refrigerator having a frozen food storage compartment and an unfrozen food storage compartment, a first evaporator section forming the bottom wall of said frozen food storage compartment, a second evaporator section arranged in thermal exchange relationship with the contents of said un-

frozen food compartment, a third evaporator section arranged in the upper portion of said frozen food storage compartment and connected to the outlet of said second evaporator section, said first and third evaporator sections forming the bottom and side walls respectively of said frozen food storage compartment, said bottom wall and said side walls being spaced from one another so as to prevent conduction of heat from said side walls to said bottom wall, refrigerant liquefying means for supplying liquid refrigerant to said evaporator sections, and means responsive to the temperature of said second evaporator section for controlling the operation of said refrigerant liquefying means.

(To Be Continued)

Gibson Appoints New Orleans Outlet

GREENVILLE, Mich. — The Gibson Refrigerator Co. has appointed a new distributor for the New Orleans, southern Louisiana, and southern Mississippi area according to W. C. Conley, vice president-sales.

Radio Specialties Corp., New Orleans, will cover 38 counties in Louisiana and 43 counties in Mississippi.

AIR CONDITIONING...

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- MERCHANDISING MEN
- APPLICATION ENGINEERS

This is YOUR OPPORTUNITY.

We are again expanding our District Office Sales organization in all areas of the country. We offer you these outstanding benefits:

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with experience in reciprocating and centrifugal refrigeration and air cond., to sell architects, engineers, contractors and dealers. Engineering degree or equivalent experience required.

MERCHANDISING SALESMEN:

with solid experience in dealer and wholesaler merchandising, to sell packaged air conditioning equipment.

APPLICATION ENGINEERS:

with engineering degree or experience in estimating and layout of reciprocating and centrifugal air cond. & refr. systems. This is our training job for future sales engineers.

Interviews will be arranged through our local offices. Send complete resume and your salary requirements to:

R. C. Hughes, Director of Training

WORTHINGTON CORPORATION

HARRISON, NEW JERSEY

UA Ok's 'Local' Refrigeration Divs.-- Emerson Radio Room Unit Line--

(Concluded from Page 1, Col. 5) that they will lose work to other unions if a separate refrigeration craft is recognized.

Another resolution asking the U. S. Bureau of Ships to rescind an order abolishing the rating of refrigeration and air conditioning mechanic also failed to carry.

This resolution was referred to the union's general officers for study because it "raises questions as to whether separate and distinct status should be continued or established for refrigeration and air conditioning mechanics."

The committee studying the resolution recommended that the entire matter should receive earnest and early consideration of the general officers.

Text of Amendment

The amendment setting up divisions within present locals for refrigeration mechanics reads as follows:

"Section 144(a). The general officers are empowered to institute in existing Building and Construction Trades local unions or combination local unions, division for organizing in the refrigeration, speculative housing, or residential branches of the plumbing and pipe fitting industry.

"They are also empowered to set up any and all rules and regulations including initiation fees and dues necessary for membership requirements.

"Building and Construction Trades local unions or combination unions may set up such division upon application to and approval by the general officers."

RACCA Head Cites Need For Increased Training

In a dispute between a plumbers local and a steamfitters local over who should be allowed to run condensate lines, the convention rejected an appeal by the plumbers local after the plumbers had lost the decision under normal union grievance procedure.

In an address presented at the UA convention, Dudley Cawthon, president of the Refrigeration and Air Conditioning Contractors Association, stressed the need for increased apprentice and journeyman training. Flow of such manpower is not in keeping with the industry's need for qualified mechanics, he said.

He also asked continued cooperation between UA and RACCA on public relations and on the latter's qualified contractor program.

'Productivity' Program Proposed

William A. Landers, president of the National Association of Plumbing Contractors, proposed that the UA join with the plumbing contractors and mechanical contractors in a "productivity" program to keep the plumbing-heating-cooling industry prosperous and in step with America's economy.

He recommended that representative group from the UA, NAPC, and Mechanical Contractors Association study the problem of meeting competition with other industries, review new

tools, materials, and methods, and recommend a program for increased production and to continue the industry effort to develop an adequate supply of skilled craftsmen and to keep skill levels abreast of technical developments.

Landers mentioned three joint ventures of the UA and NAPC in which he declared, "we have been successful to a degree that could not have been attained by either organization working alone."

These are the apprenticeship committee, industrial relations council (with the Mechanical Contractors Association), and the all-industry plumbing and heating modernization committee.

George Hall, president of the Mechanical Contractors Association, also addressed the union convention.

(Concluded from Page 1, Col. 5) ble 1-hp. room air conditioner in the industry. It carries a suggested list price of \$358.

The complete line offers 23 models in four series. The 115-volt, 1-hp. model shares the Deluxe "Power Saver" series with a ¾-hp. 7½-amp. unit, priced at \$328, retail.

The Deluxe series, containing ¾-hp. models in 115, 208, and 230 volts and 1-hp. models in 208 and 230 volts with thermostat and 230 volts without thermostat, offers for the first time a choice in colored plastic grilles.

Standard color for the series is dove grey. For \$10 extra, customers can have their choice of mist green, sky blue, antique white, or carnation pink grilles.

The Deluxe series carries no suggested list prices. Distributors will set their own lists to

fit their particular markets, it is reported.

The Super Compact series, also offered without suggested list prices contains three ¾-hp. units. These include a 115-volt model, a 230-volt model, and a 115-volt, 7½-amp. model.

The Super Dynamic series contains 12 models, four each in the 1, 1½, and 2-hp. sizes. In each size grouping, there are two models in 230 volts and two in 208. One contains Emerson's "Electronic Germ-Killer" and the other doesn't.

Suggested list prices are: 1 hp.—\$398 (\$438 with germ killer); 1½ hp.—\$488 (\$528 with germ killer); and 2 hp.—\$548 (\$588 with germ killer).

Abrams pointed out that prices on the 1957 models will be increased between 5 and 10% at the factory level some time in September. The initial lower

prices are intended to stimulate early buying, he explained.

Abrams reported that Emerson's air conditioner sales for this year were 75% higher than in 1955. Sales this year were some 75,000 units. Production scheduled for the 1957 line exceeds 100,000 units, he asserted. He claimed factory and distributors have practically no carry over of 1956 stock.

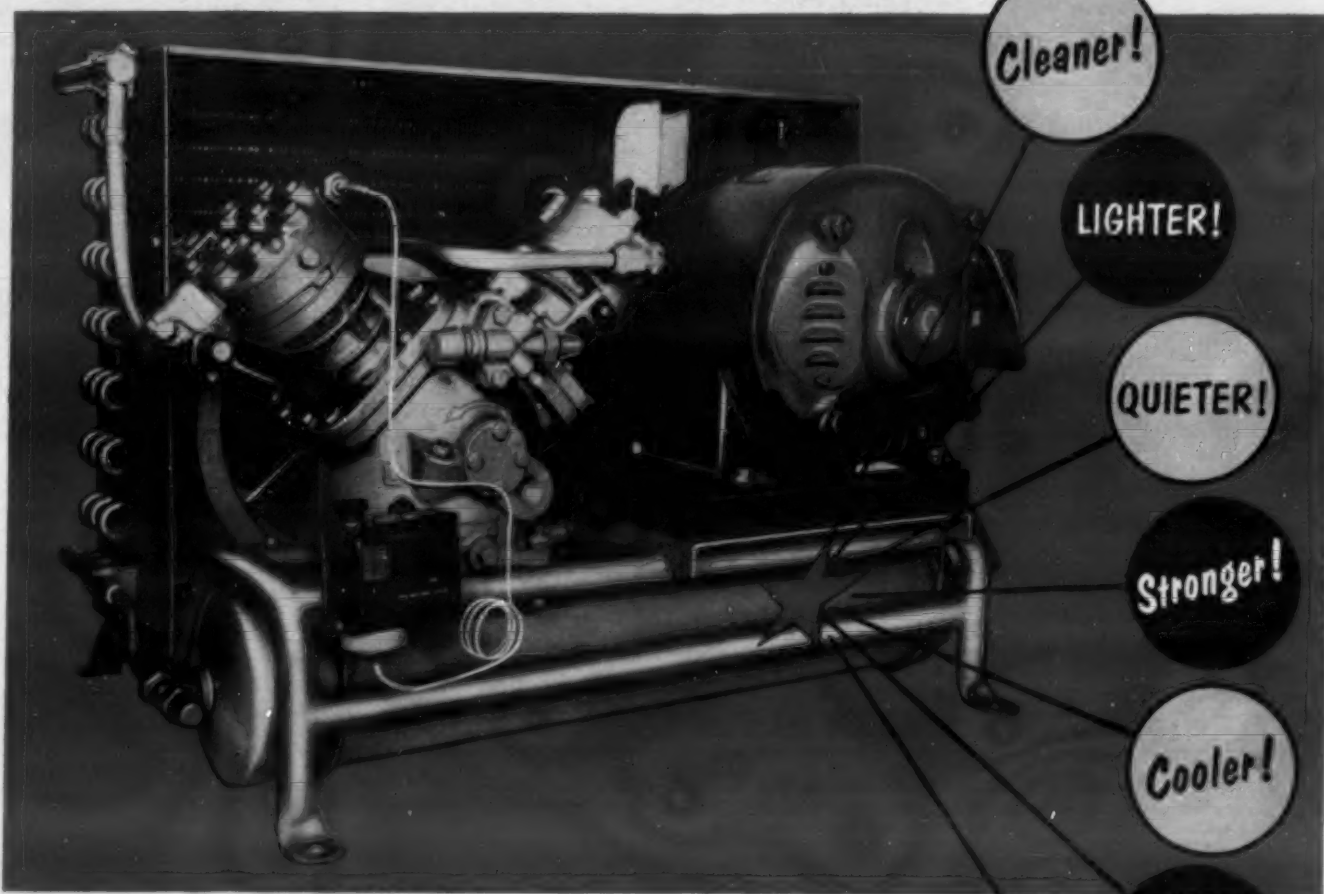
Abrams noted that Emerson makes a variety of accessories to permit a number of different kinds of installations of its units. He added that the company also makes residential and commercial air conditioners.

Cooling Firm Opened

AUSTIN, Texas—Air Conditioning Industries has recently been incorporated in Houston, records in the Secretary of State's office here show.

Capital stock of the company was listed as 20,000 shares at non par value.

NOW... FROM KELVINATOR! IMPROVED CONDENSING UNITS WITH NEW TUBULAR BASES



Here is a tremendous new improvement in Kelvinator open-type condensing units! New tubular-type bases give you many *plus* benefits that now make Kelvinator, more than ever before, *your best buy*. Look at the heavy-duty construction of the Model OA-100 pictured above... check again the *extra value* features you get with Kelvinator's improved tubular-base models.

Kelvinator offers you a complete line of precision-built air-cooled, water-cooled, combination, and truck-type condensing units... hermetically sealed condensing units... and hermetic compressors for household and commercial cabinet use.

See your Kelvinator wholesaler, or write Kelvinator Division, American Motors Corporation, Detroit 32, Michigan.

Kelvinator

Division of American Motors Corp., Detroit 32, Mich.

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